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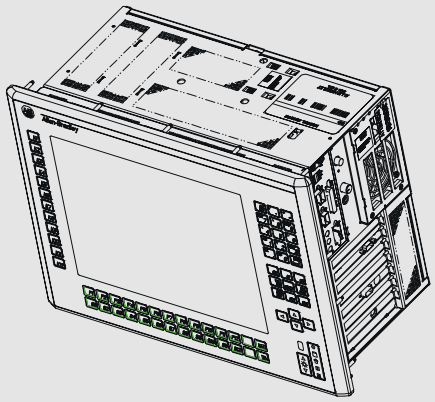
Allen-Bradley

6180 Industrial Computer

User Manual



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Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. "Safety Guidelines for the Application, Installation, and Maintenance of Solid State Controls" (Publication SGI-1.1) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation with respect to use of the information, circuits, equipment, or software described in this manual.

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Throughout this manual, we use notes to make you aware of safety considerations.

ATTENTION: Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss.

Important: Identifies information that is especially important for successful application and understanding of the product.

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Using this Manual

Read this preface to familiarize yourself with the rest of the manual. The preface covers the following topics:

- who should use this manual
- the purpose of the manual
- contents of the manual
- conventions used in this manual
- Allen-Bradley support

Who Should Use This Manual

Use this manual if you are responsible for installing, using, or troubleshooting the 6180 Industrial Computer.

You should have a basic understanding of computers and the specific Microsoft Windows operating system that the 6180 Industrial Computer will run.

Purpose of this Manual

This manual is a *user guide* for the 6180 Industrial Computer. It gives an overview of the system and describes procedures you use to:

- install the 6180 Computer in a rack, panel or enclosure
- install and remove system components
- run the system
- troubleshoot the system

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Contents of this Manual

Chapter	Title	Contents
	Preface	Describes the purpose, background, and scope of this manual. Also specifies the audience for whom this manual is intended.
1	System Features	Shows the different versions of the 6180 Computer and system features.
2	Installation	Describes how to install the 6180 Computer in a panel or enclosure. Also tells how to connect devices (such as mouse or keyboard) to the system.
3	Initial Operation and Setup	Tells how to start and check out the system.
4	Adding and Removing System Components	Gives procedures for adding and removing the back panel accessory drive cover, add–in boards, and processor board.
5	Adding and Removing memory	Gives procedures for adding and removing memory
6	Adding and Removing Processors	Gives procedures for adding and removing processors.
7	Adding and Removing Removable Media	Gives procedures for adding and removing removable media.
8	Adding and Removing Data Storage Drives	Gives procedures for adding and removing data storage drives.
9	Adding and Removing Power Supplies	Gives procedures for adding and removing power supplies.
10	Adding and Removing Displays And Backlights	Gives procedures for adding and removing displays and backlights.
11	AB Video Cards	Explains how to use video cards in the 6180 Computer.
12	AB Keypad Interface Cards	Explains how to use keypad interface cards in the 6180 Computer.
13	Keypad Configuration Utility Software	Gives procedures on how to use the Keypad Configuration Utility software in the 6180 Computer.
14	Touchscreen Drivers and Utilities	Explains how to use touchscreens in the 6180 Computer.
15	System Troubleshooting	Explains how to interpret and correct problems with the 6180 Computer.
16	Maintenance	Gives procedures for cleaning the 6180 Computer display, and other components.

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Chapter	Title	Contents
Appendix A	Specifications	Provides physical, electrical, environmental, and functional specifications.
Appendix B	European Union Directive Compliance	????
Appendix C	Field Replacement Units	????
Appendix D	Glossary	List of terms

<<WRITER: Update contents>>

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Manual Conventions

The following conventions are used throughout this manual:

- Bulleted lists such as this one provide information, not procedural steps.
- Numbered lists provide sequential steps or hierarchical information.

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Contact your local Allen-Bradley representative for:

- sales and order support
- product technical training
- warranty support
- support service agreements

Technical Product Assistance

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For additional product information and a description of the technical services available, visit the Rockwell Automation/Allen-Bradley Internet site at: http://www.ab.com.

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System Features

Chapter Objectives

This chapter is an overview of the 6180 industrial computer including:

- available versions
- standard keypad
- full alphanumeric keypad
- software
- additional catalog items

6180 Computer Versions

The following table summarizes the options for each version:

Feature	NDM Version No Display, Metal Bezel	NDP Version No Display, Plastic Bezel	SD104 Version 10.4-inch (264 mm) Display, 64–key Standard Keypad	SD104 Version 10.4-inch (264 mm) Display, 96–key Full Alphanumeric Keypad	SD121 Version 12.1-inch (307 mm) Display, 69–key Standard Keypad	SD150 Version 15-inch (381 mm) Display, 70–key Standard Keypad	SD150 Version, 15-inch (381 mm) Display, No Keypad
Pentium (Socket 7) Processor Board	√	√	√	√	√	√	√
(Slot 1) Pentium III Processor Board	√	√	√	√		√	√
Pentium III/Celeron (Flip-Chip PGA 370) Processor Board	√	√	√	√	√	√	√
Hard Drive	√	√	√	√	√	√	√
1.44 Mbyte Floppy Drive	√	√	√	√	√	√	√
External Video Driver	√	√	√	√	√	√	√
Integral Flat Panel Display			√	√	√	√	√
Front Panel Access to Removable Media (Floppy, CD, or Tape)		√	√	√			

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Feature	NDM Version No Display, Metal Bezel	NDP Version No Display, Plastic Bezel	SD104 Version 10.4-inch (264 mm) Display, 64–key Standard Keypad	SD104 Version 10.4-inch (264 mm) Display, 96–key Full Alphanumeric Keypad	SD121 Version 12.1-inch (307 mm) Display, 69–key Standard Keypad	SD150 Version 15-inch (381 mm) Display, 70–key Standard Keypad	SD150 Version, 15-inch (381 mm) Display, No Keypad
Front Panel Access to Mouse and Keyboard Ports		√	√	√			
Front Panel Keypad			√	√	√	√	
Integrated Front Panel Mouse			√		√		
Standard 19-inch Rack Mounting	√	√	√	√	√	√	√
Panel Mount with Studs or Clips		√	√	√	√	√	√
Infrared (IrDA) Receiver/ Transmitter		√	√	√	√	√	√
Touch Screen Option			√		√	√	√
Field Replaceable Backlight			√	√	√	√	√

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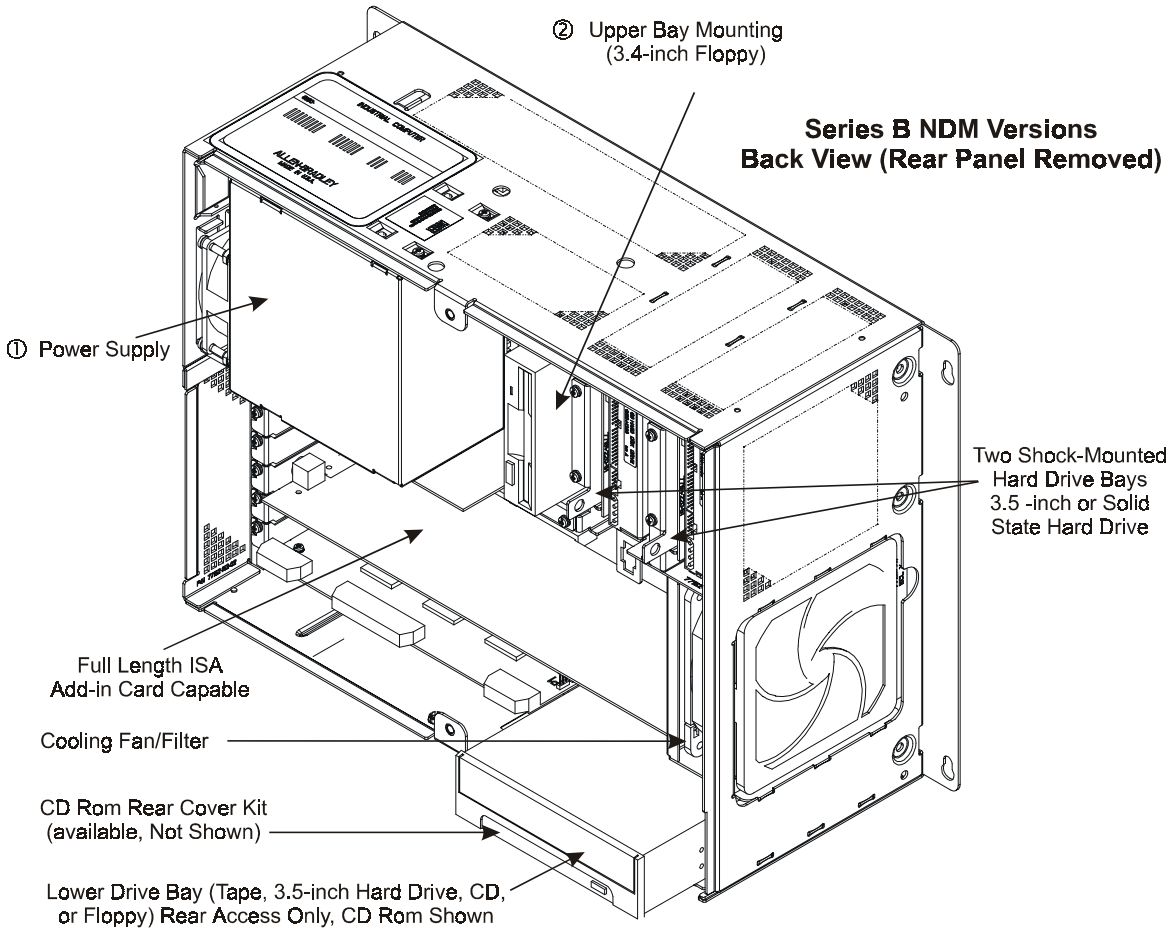
Common 6180 Computer Features

Figure 1- 1



① Power supply filter required for Pentium systems only.

② Requires a mounting bracket (catalog number 6189-UBFDBRKT/B). Instructions are provided with bracket.

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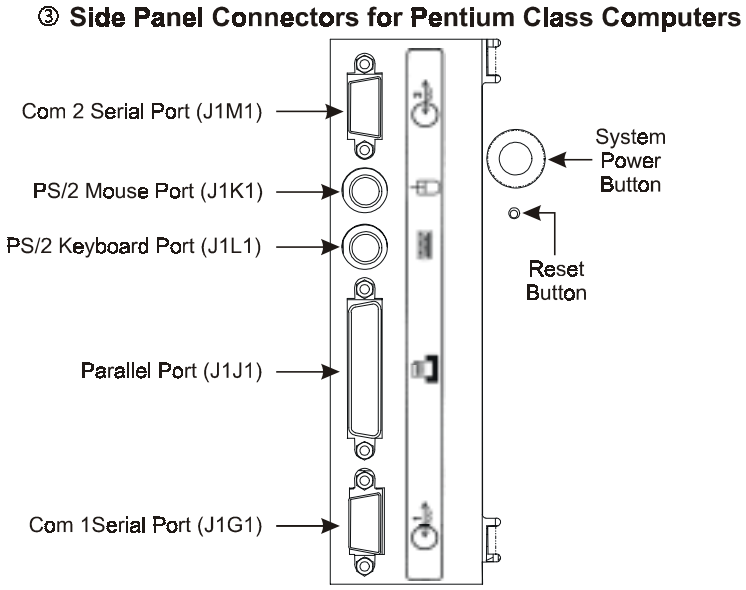
Figure 1- 2


③ Side Panel Connectors for Pentium Class Computers
Com 2 Serial Port (J1M1)
PS/2 Mouse Port (J1K1)
PS/2 Keyboard Port (J1L1)
Parallel Port (J1J1)
Com 1Serial Port (J1G1)
System Power Button
Reset Button

③ The side panel connectors on Pentium II computers are similar to the connectors shown here, with the exception of two USB connectors.

Figure 1- 3

Need drawing for: Side Panel Connectors for Pentium II Class Computers (use illus. From Seattle II (see engineering)

Figure 1- 4

Need drawing for: Side Panel Connectors for Pentium III/Celeron Class Computers (use illus. From ITOX (see engineering)

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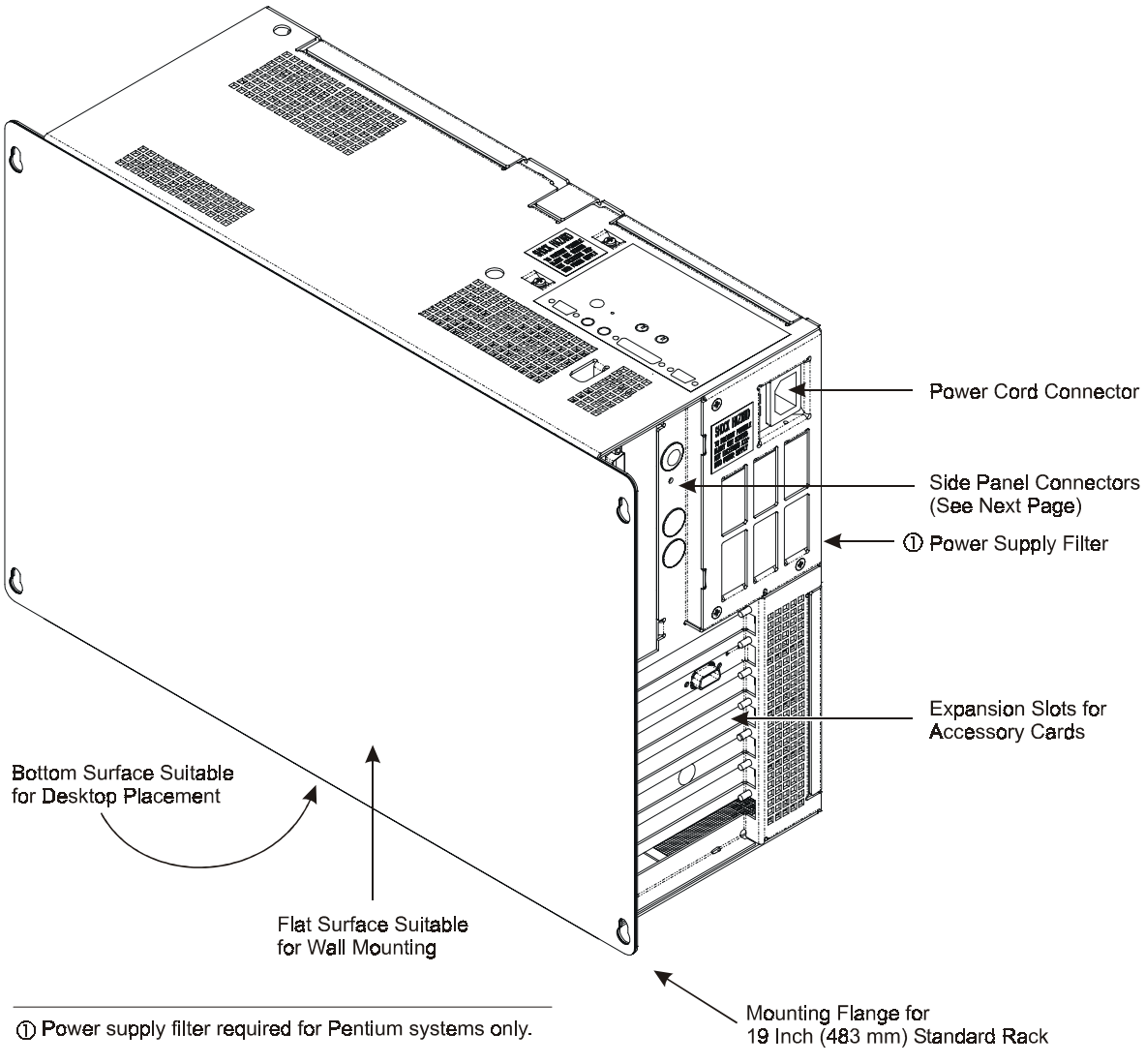
NDM Version with No Display & Metal Bezel

The following illustrations show the major features and controls of the non–display, metal bezel versions of the 6180 Computer (6180-xxAxxxxxxx).

Figure 1- 5



① Power supply filter required for Pentium systems only.

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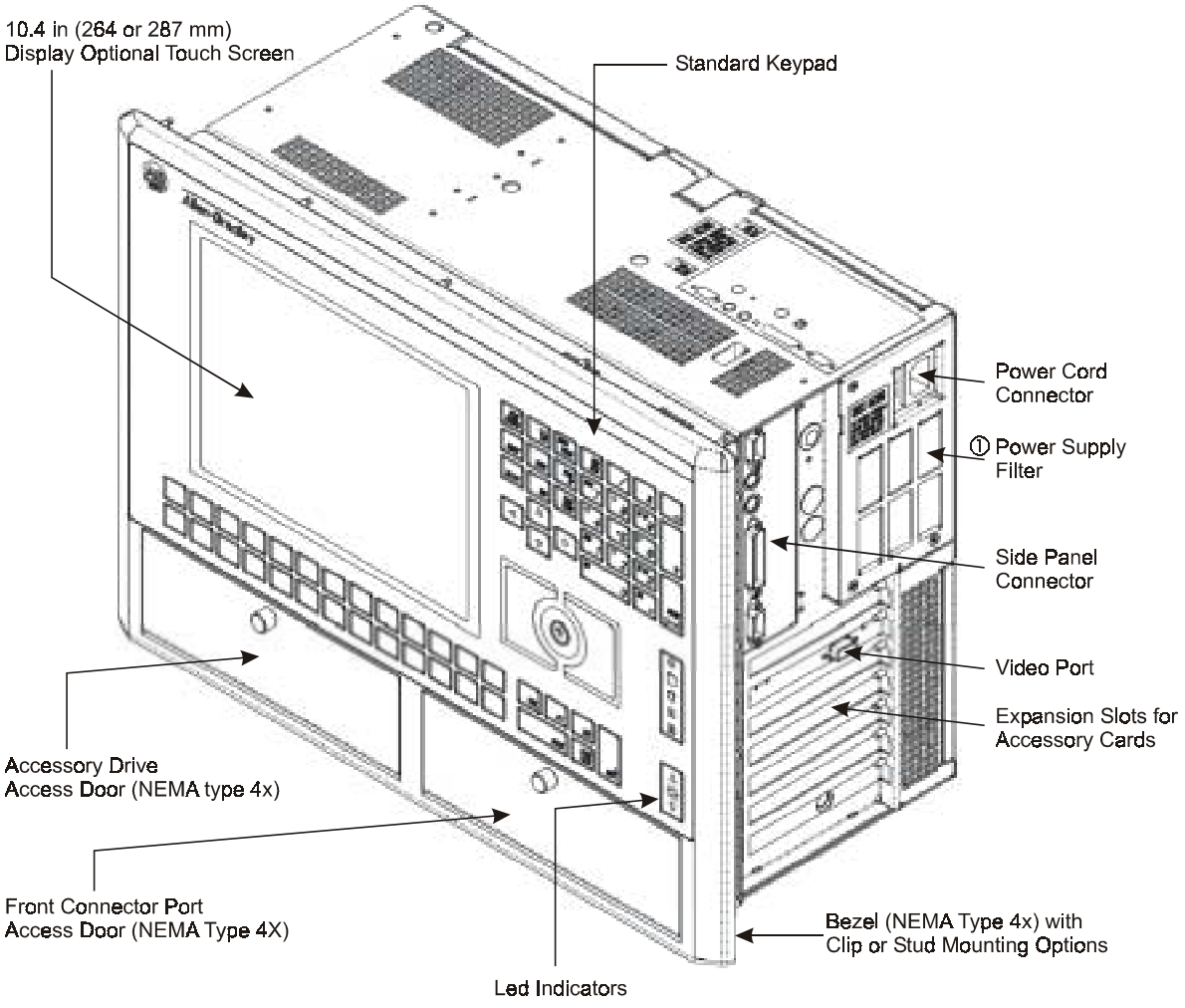
NDP Version with No Display & Plastic Bezel

The following illustration shows the major features and controls of the non–display, plastic bezel versions of the 6180 Computer (6180-xxBxxxxxxx).

Figure 1- 6



① Power supply filter required for Pentium systems only.

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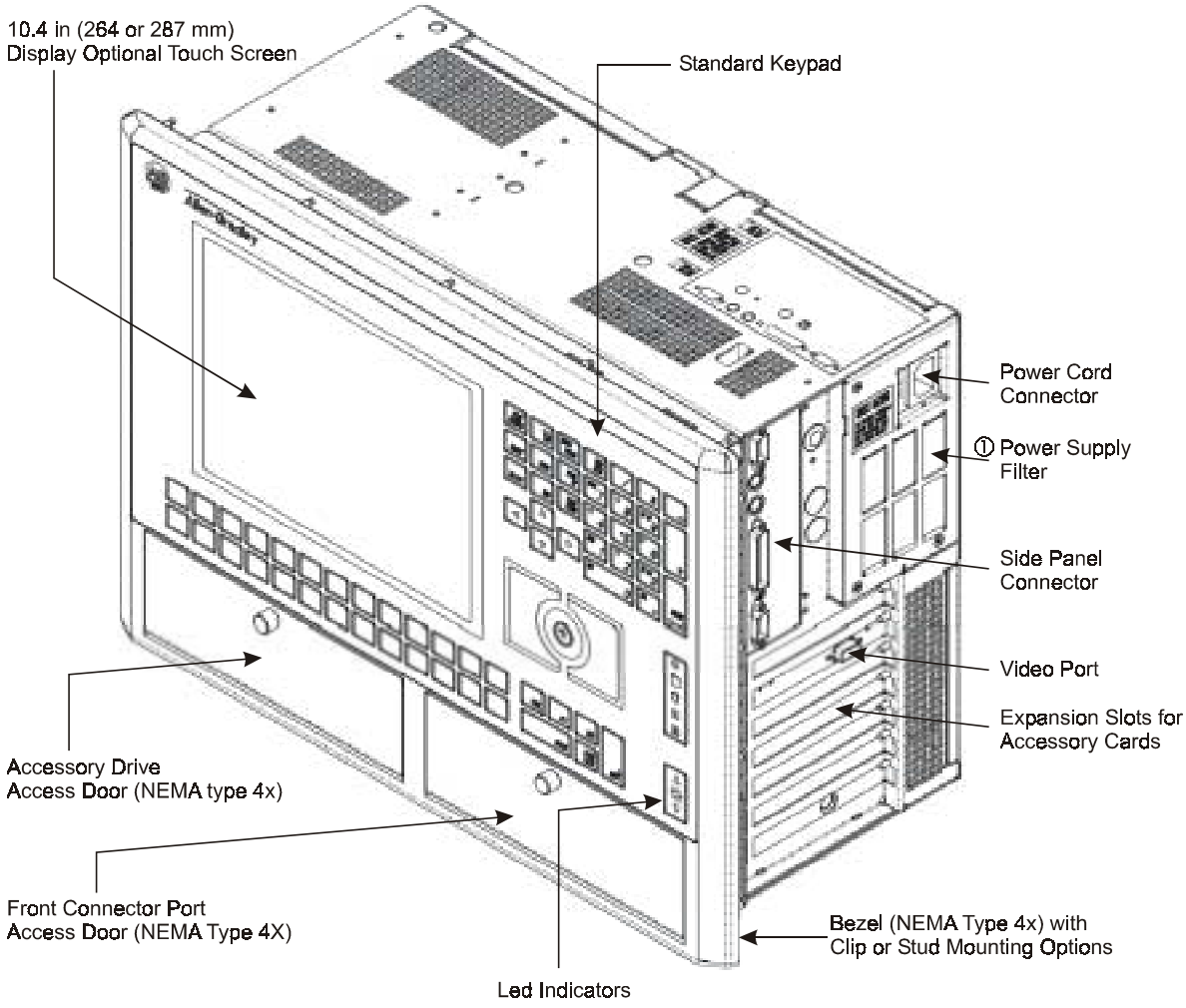
SD104 Version with Display and 64-Key Standard Keypad

The following illustration shows the major features and controls of the display, plastic bezel versions of 6180 Computer (6180-xxCxxxxxxx, -xxDxxxxxxx).

Figure 1- 7



① Power supply filter required for Pentium systems only.

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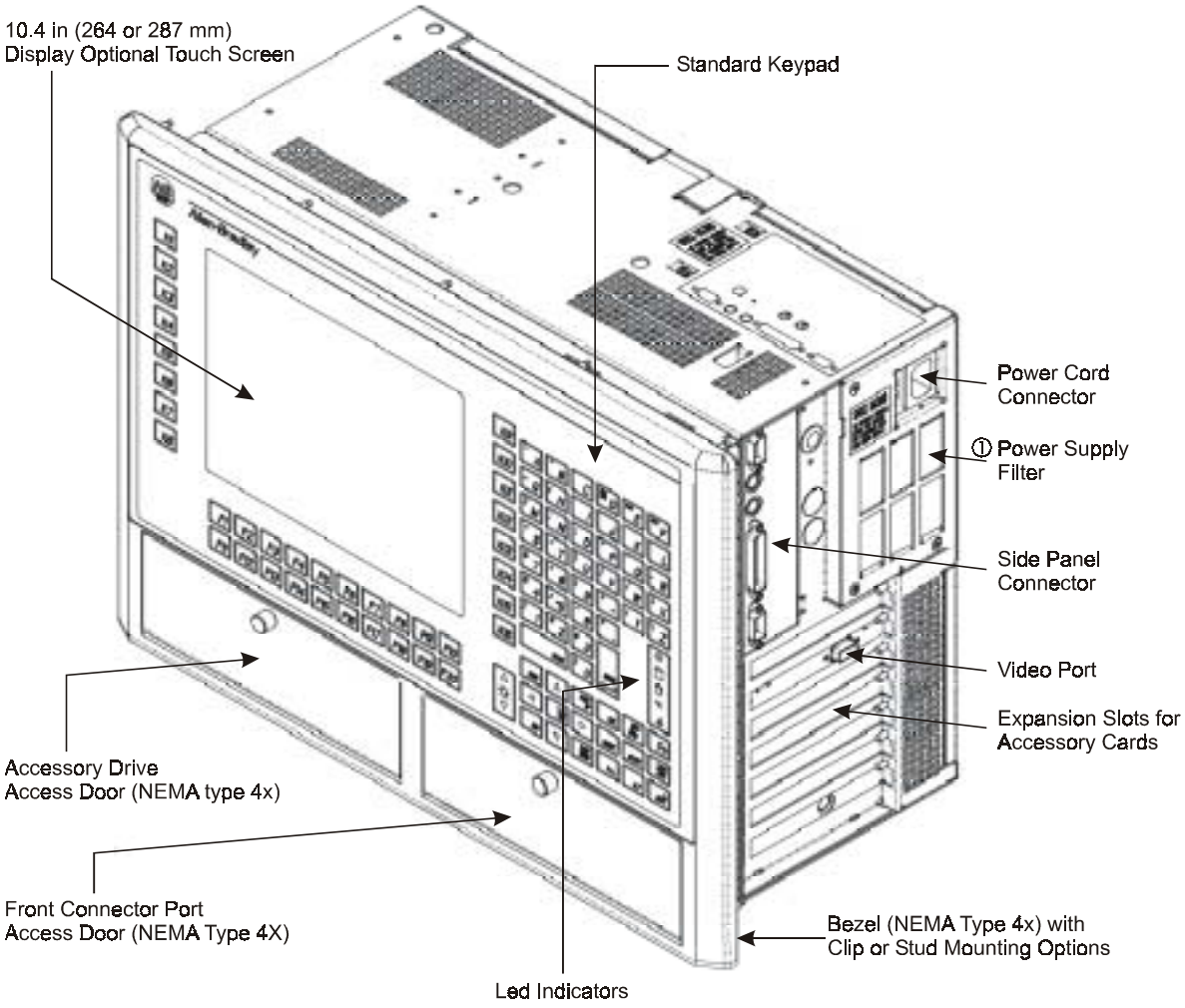
SD104 Version with Display and Full Alphanumeric Keypad

The following illustration shows the major features and controls of the full alphanumeric keypad versions of 6180 Computer (6180-xxGxxxxxxx).

Figure 1- 8



① Power supply filter required for Pentium systems only.

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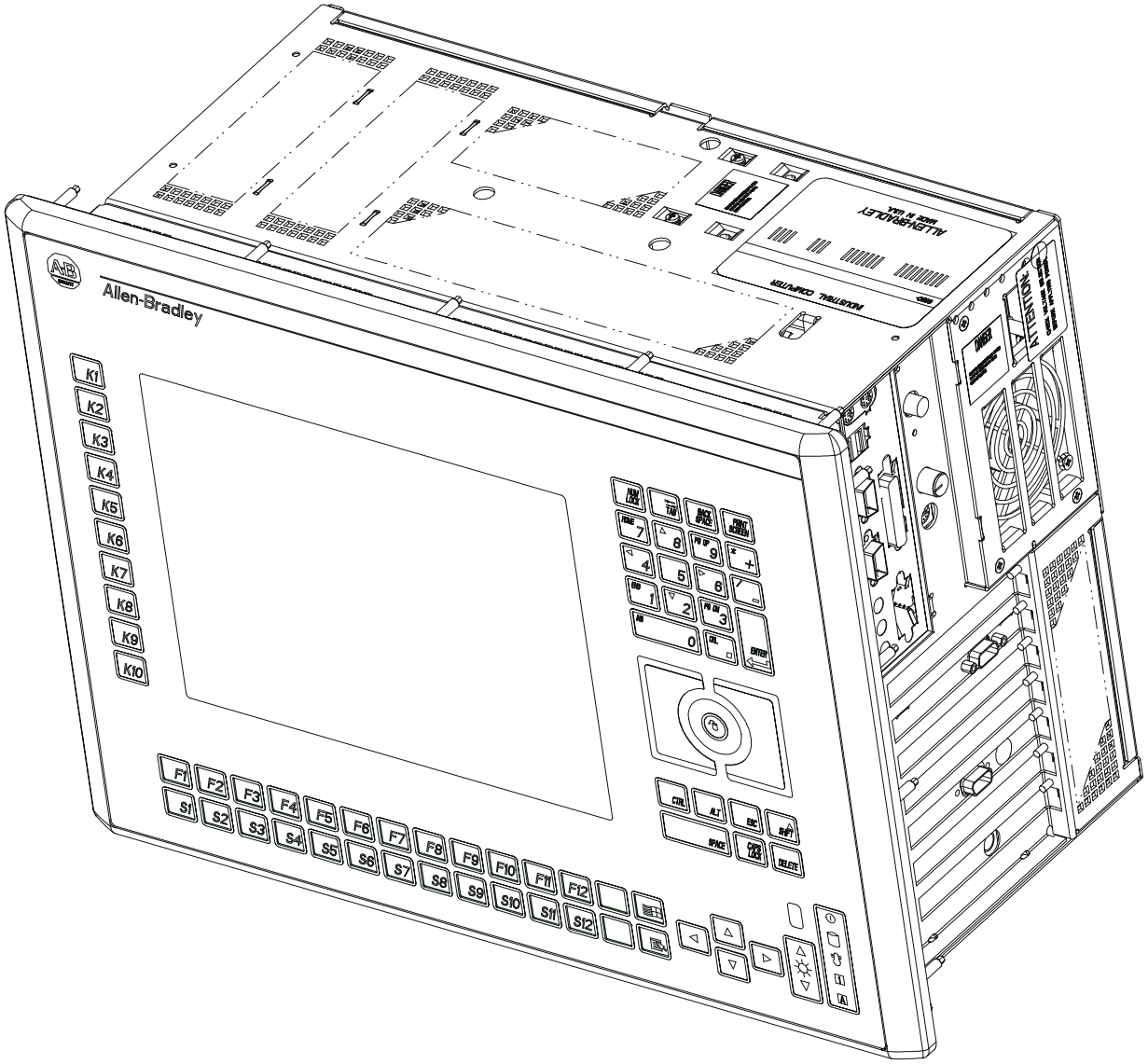
SD121 Version with Display and 69-Key Standard Keypad

The following illustrations show the major features and controls of the 12.1 in. keypad versions of 6180 Computer (6180-xxLxxxxxxxx, 6180-xxMxxxxxxxx).

Figure 1- 9



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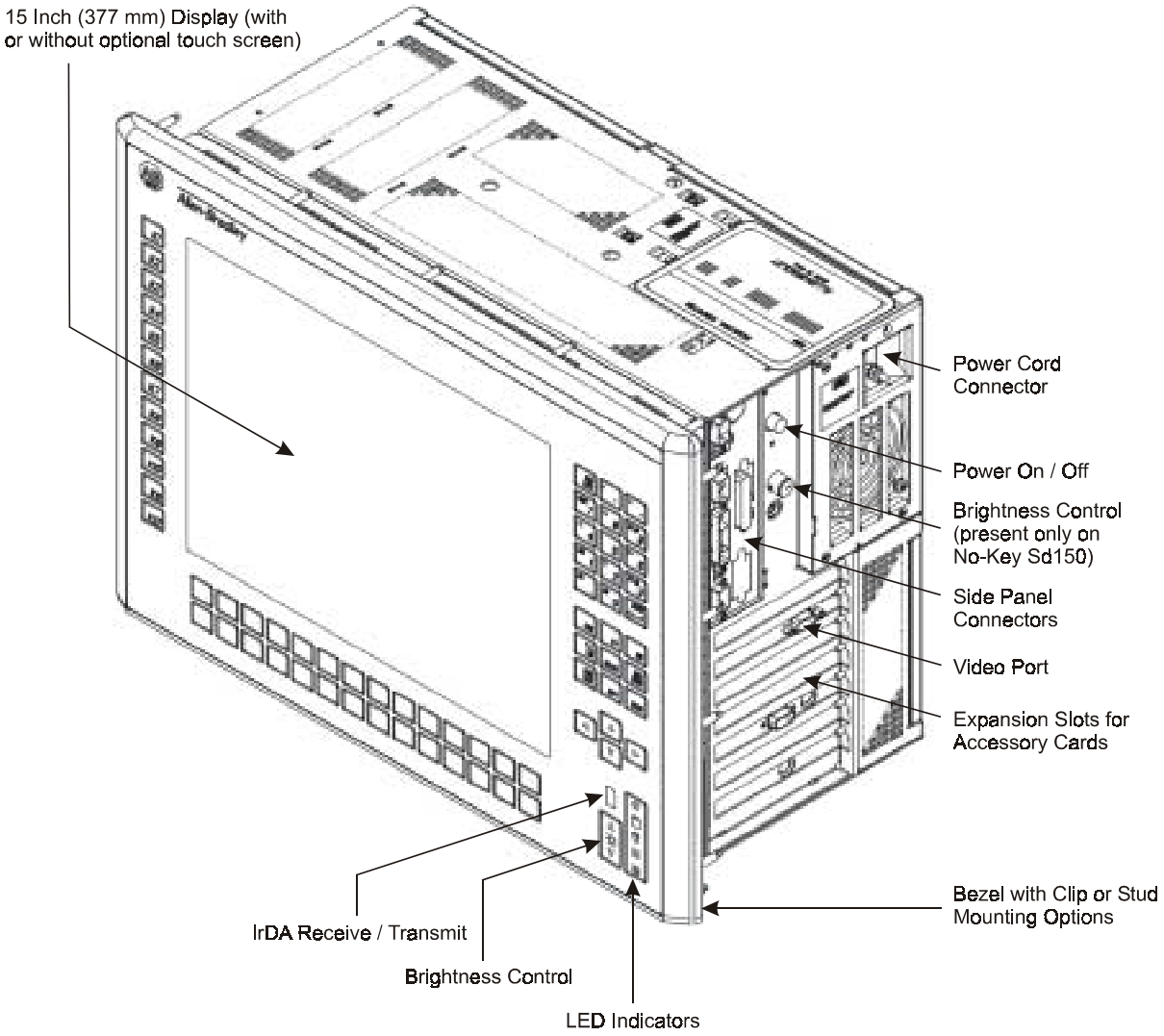
SD150 Version with Display and 70-Key Standard Keypad

The following illustration shows the major features and controls of the 70-key keypad versions of 6180 Computer (6180-xxHxxxxxxx, -xxIxxxxxxx).

Figure 1- 10


15 Inch (377 mm) Display (with or without optional touch screen)
Power Cord Connector
Power On / Off
Brightness Control (present only on No-Key Sd150)
Side Panel Connectors
Video Port
Expansion Slots for Accessory Cards
Bezel with Clip or Stud Mounting Options
IrDA Receive / Transmit
Brightness Control
LED Indicators

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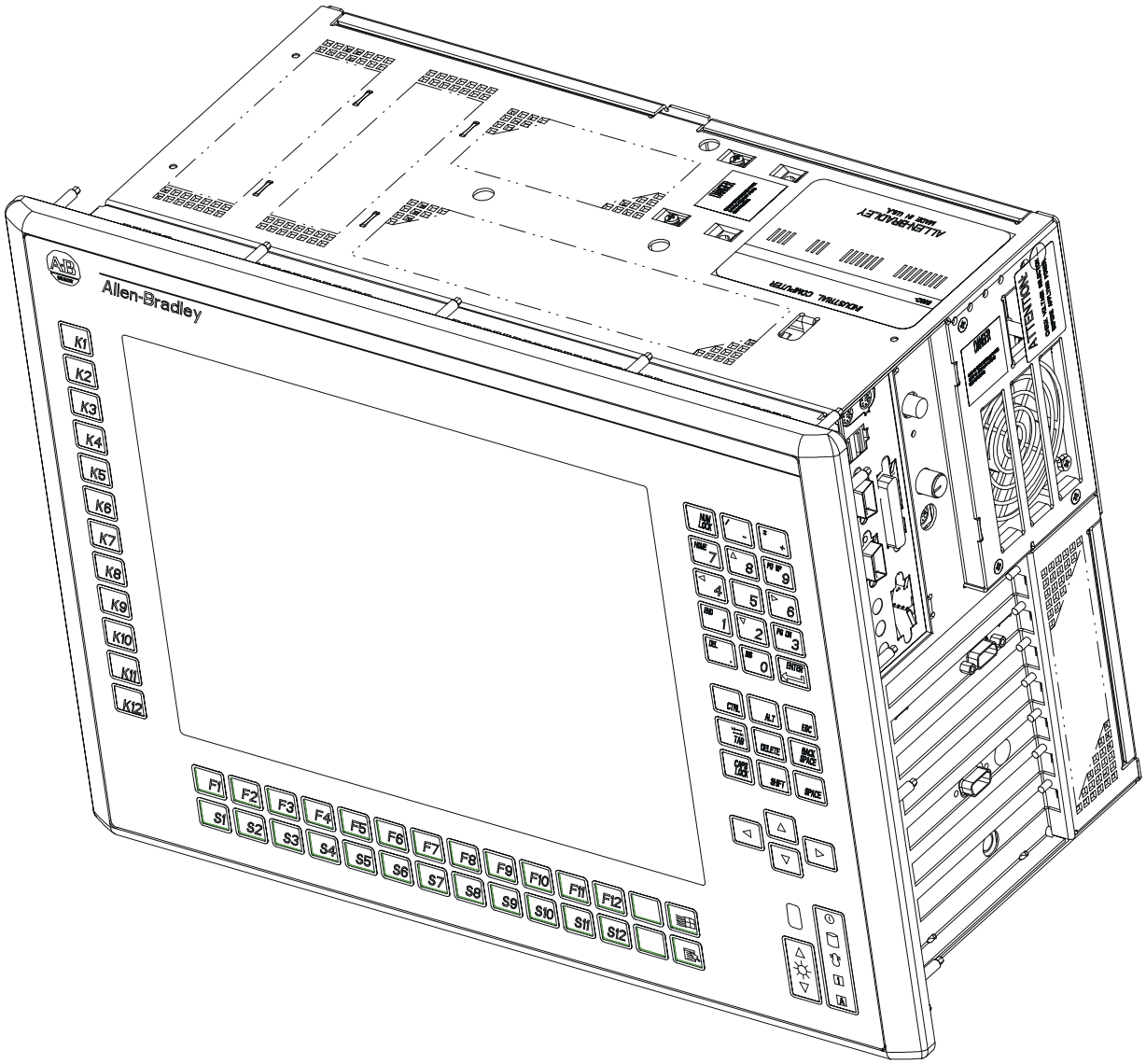
SD150 Version with Display and no Keypad

The following illustrations show the major features and controls of the 15 in. no keypad versions of 6180 Computer (6180-xxJxxxxxxx, 6180-xxKxxxxxxx).

Figure 1- 11



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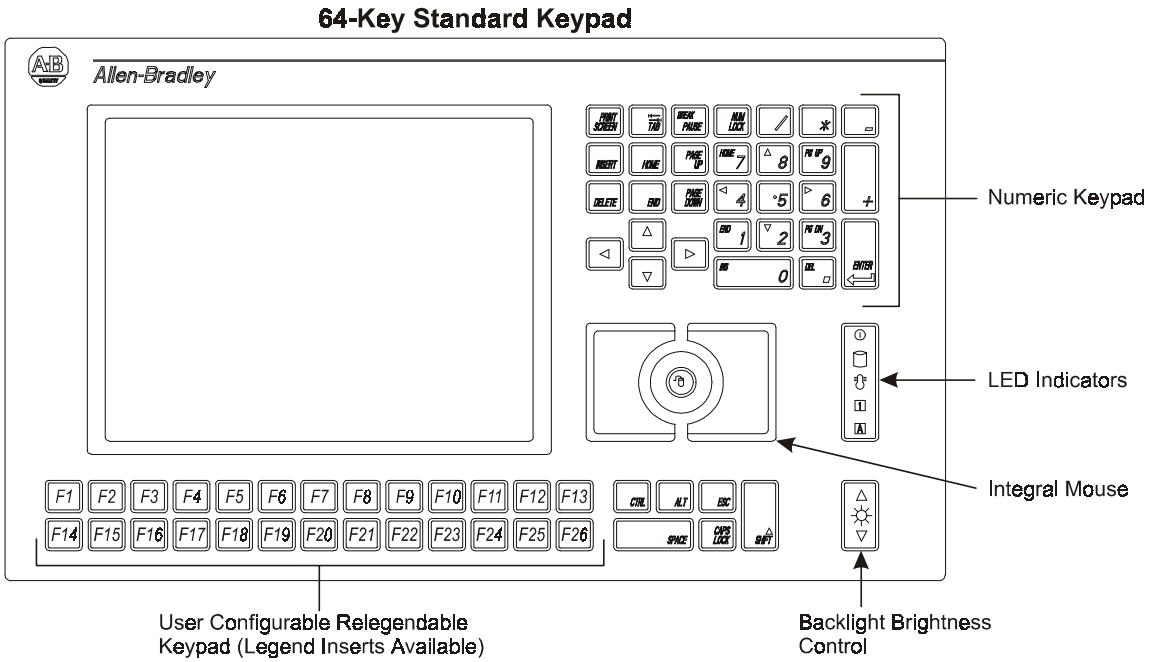
64–Key Standard Keypad

The standard SD104 keypad provides integrated keyboard and mouse control functionality.

Figure 1- 12



Numeric Keys

The NUM LOCK key allows you to use the same set of keys on the numeric keypad for alternate Number and Cursor Control functions. Press the NUM LOCK key to select the Number function for these keys. The NUM LOCK LED on the keypad will be lit to indicate the Number function is active. Press the NUM LOCK key again to select the Cursor Control function for these keys. The NUM LOCK LED will be lit to reflect the function.

For example, with the NUM LOCK key active (i. e. lit), the numeric key “4” allows you to enter the number “4”. With the NUM LOCK key inactive, the numeric key “4” allows you to move the cursor to the left on the display.

NUM LOCK “On” Number Function	NUM LOCK “Off” Cursor Control Function
1	End
2	Down Arrow

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NUM LOCK "On" Number Function	NUM LOCK "Off" Cursor Control Function
3	Page Down
4	Left Arrow
5	None
6	Right Arrow
7	Home
8	Up Arrow
9	Page Up
0	Insert
.	Delete

Configurable Keys

User Configurable Key Legend	Default	User Defined Options
F1	F1	Any alphanumeric character or string (restricted by KCU)
F2	F2	
F3	F3	
F4	F4	
F5	F5	
F6	F6	
F7	F7	
F8	F8	
F9	F9	
F10	F10	
F11	F11	
F12	F12	
F13	Left Windows Key	
F14	SHIFT + F1	
F15	SHIFT + F2	
F16	SHIFT + F3	
F17	SHIFT + F4	
F18	SHIFT + F5	
F19	SHIFT + F6	
F20	SHIFT + F7	
F21	SHIFT + F8	
F22	SHIFT + F9	
F23	SHIFT + F10	

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User Configurable Key Legend	Default	User Defined Options
F24	SHIFT + F11	Any alphanumeric character or string (restricted by KCU)
F25	SHIFT + F12	
F26	Windows Application Key	

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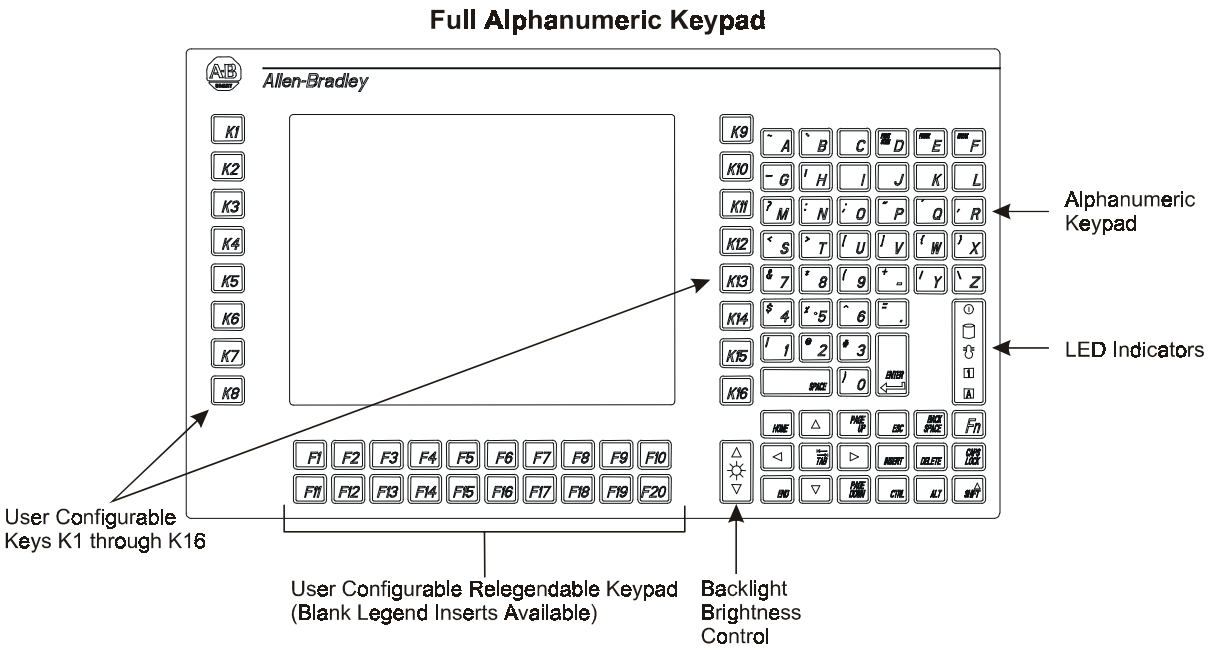
SD104 Alphanumeric Keypad

The SD104 alphanumeric keypad provides full keyboard functionality.

Figure 1- 13



Alphanumeric Keys

The “Fn” key allows you to use the same set of keys on the keypad for alternate functions. The “Fn” key must be pressed and held while pressing another key to activate the other functions.

For example, if you press the “D” key, the letter “D” is entered on the display. If you press and hold the Fn key while pressing the “D” key, you activate the other function for that key, which is to print the screen.

Alphanumeric Key	Alternate Function	Alphanumeric Key	Alternate Function
A	~	W	{
B	`	X	}
D	Print Screen	Y	/
E	Pause	Z	\
F	Break	1	!
G	_	2	@
H	|	3	#

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Alphanumeric Key	Alternate Function	Alphanumeric Key	Alternate Function
M	?	4	$
N	:	5	%
O	;	6	^
P	“	7	&
Q	‘	8	*
R	,	9	(
S	<	0	)
T	>	_	+
U	[	.	=
V	]		

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69–Key Standard Keypad

The SD121 keypad provides keyboard functionality.

Figure 1- 14

INSERT GRAPHIC HERE

Numeric Keys

The NUM LOCK key allows you to use the same set of keys on the numeric keypad for alternate Number and Cursor Control functions. Press the NUM LOCK key to select the Number function for these keys. The NUM LOCK LED on the keypad will be lit to indicate the Number function is active. Press the NUM LOCK key again to select the Cursor Control function for these keys. The NUM LOCK LED will be lit to reflect the function.

For example, with the NUM LOCK key active (i. e. lit), the numeric key “4” allows you to enter the number “4”. With the NUM LOCK key inactive, the numeric key “4” allows you to move the cursor to the left on the display.

NUM LOCK “On” Number Function	NUM LOCK “Off” Cursor Control Function
1	End
2	Down Arrow
3	Page Down
4	Left Arrow
5	None
6	Right Arrow
7	Home
8	Up Arrow
9	Page Up
0	Insert
.	Delete

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Configurable Keys

User Configurable Key Legend	Default	User Defined Options
K1	F1	Any alphanumeric character or string (restricted by KCU)
K2	F2	
K3	F3	
K4	F4	
K5	F5	
K6	F6	
K7	F7	
K8	F8	
K9	F9	
K10	F10	
A	A	
B	B	
C	C	
D	D	
E	E	
F	F	
G	G	
H	H	
I	I	
J	J	
K	K	
L	L	
M	M	
N	N	
O	O	
P	P	
Q	Q	
R	R	
S	S	
T	T	
U	U	
V	V	
W	W	
X	X	
Y	Y	
Z	Z	

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User Configurable Key Legend	Default	User Defined Options
Windows Logo	Left Windows Key	Any alphanumeric character or string (restricted by KCU)
Windows App	Windows Application Key	

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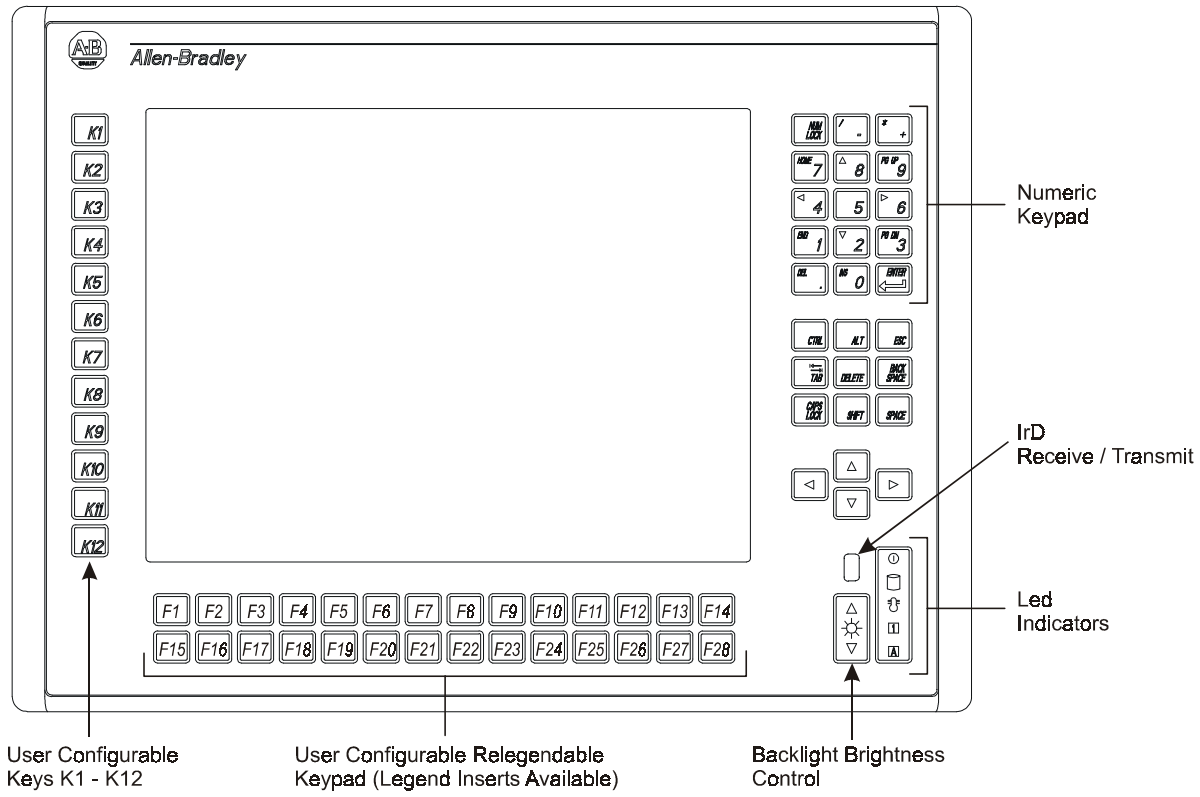
70–Key Standard Keypad

The SD150 keypad provides keyboard functionality.

Figure 1- 15



The NUM LOCK key allows you to use the same set of keys on the numeric keypad for alternate Number and Cursor Control functions. Press the NUM LOCK key to select the Number function for these keys. The NUM LOCK LED on the keypad will be lit to indicate the Number function is active. Press the NUM LOCK key again to select the Cursor Control function for these keys. The NUM LOCK LED will be lit to reflect the function.

For example, with the NUM LOCK key active (i. e. lit), the numeric key “4” allows you to enter the number “4”. With the NUM LOCK key inactive, the numeric key “4” allows you to move the cursor to the left on the display.

NUM LOCK “On” Number Function	NUM LOCK “Off” Cursor Control Function
1	End
2	Down Arrow

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NUM LOCK “On” Number Function	NUM LOCK “Off” Cursor Control Function
3	Page Down
4	Left Arrow
5	None
6	Right Arrow
7	Home
8	Up Arrow
9	Page Up
0	Insert
.	Delete

Configurable Keys

User Configurable Key Legend	Default	User Defined Options
K1	F1	Any alphanumeric character or string (restricted by KCU)
K2	F2	
K3	F3	
K4	F4	
K5	F5	
K6	F6	
K7	F7	
K8	F8	
K9	F9	
K10	F10	
A	A	
B	B	
C	C	
D	D	
E	E	
F	F	
G	G	
H	H	
I	I	
J	J	
K	K	
L	L	
M	M	
N	N	

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User Configurable Key Legend	Default	User Defined Options
O	O	Any alphanumeric character or string (restricted by KCU)
P	P	
Q	Q	
R	R	
S	S	
T	T	
U	U	
V	V	
W	W	
X	X	
Y	Y	
Z	Z	
Windows Logo	Left Windows Key	
Windows App	Windows Application Key	

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Configurable Keys

Using the Keyboard Configuration Utility software program, you can assign alpha characters or other functions to the keys in the configurable section of Model 6180 keypads. For more information, refer to *Chapter 13*, for the Keyboard Configuration Utility.

Re-legendable Keys

The Legend Strip Kit (Catalog No. 6189-KEYKIT1) contains legend strips for the following computers. .

64-Key Standard Keypad

Versions with an SD104 standard keypad (6180-xxC, -xxD) are shipped with the 26 configurable keys assigned to function keys F1 through F12, and shifted function keys S1 through S12. Removable inserts provide standard or custom legends for these keys.

Full Alphanumeric Keypad

Versions with an SD104 alphanumeric keypad (6180-xxG) are shipped with the 36 configurable keys assigned to Function Keys K1 through K16 and F1 through F20. Removable inserts provide standard or custom legends for the F1 through F20 keys.

69-Key Standard Keypad

Versions with an SD104 keypad (6180-xxL, -xxM) are shipped with the lower 28 configurable keys assigned to function keys F1 through F12 and shifted function keys S1 through S12. Removable inserts provide standard or custom legends for the 28 relegendable and reprogrammable keys. (i.e. A-Z keys, Windows key, and Application key).

70-Key Keypad

Versions with an SD121 keypad (6180-xxH, -xxI) are shipped with the lower 28 keys assigned to the A-Z keys, Windows key, and Application key.

Removable inserts provide standard or custom legends for the 28 re-legendable and re-programmable keys.

Keyboard Interface Controller Card

The 6180 keypad can work simultaneously with an external keyboard. The 6180 Keyboard Interface Controller multiplexes information from both the 6180 keypad and the external keyboard. Refer to Chapter 12, for information on the 6189-KICxxx card.

Integral Mouse

On the SD104 and SD121 standard keypads, the integral mouse consists of left, right, and cursor control buttons. Control the movement of the screen cursor by pressing the edge of the cursor button in the direction

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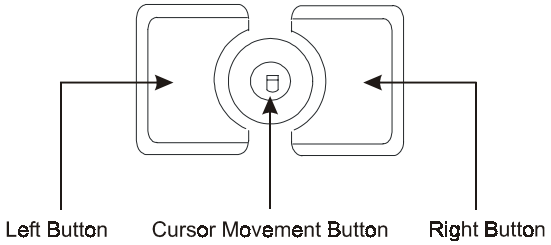
you want the cursor to move. The integral mouse can work simultaneously with the optional touchscreen.

Figure 1- 16



LED Indicators

Indicator	Color	Indicates
<<graphic needed>>	Green	Power On
<<graphic needed>>	Green	Hard Drive Operating
<<graphic needed>>	Red	Overtemperature. Temperature inside the 6180 Computer enclosure is above 140^0 F (60^0 C)
<<graphic needed>>	Green	Num Lock On
<<graphic needed>>	Green	Caps Lock On

Backlight Brightness Control <<graphics needed>>

Use the backlight brightness control to vary the screen lighting for optimal viewing.

On SD150 versions without keypads (6180-xxJ and 6180-xxK), a backlight brightness adjustment knob is located on the right side of the chassis.

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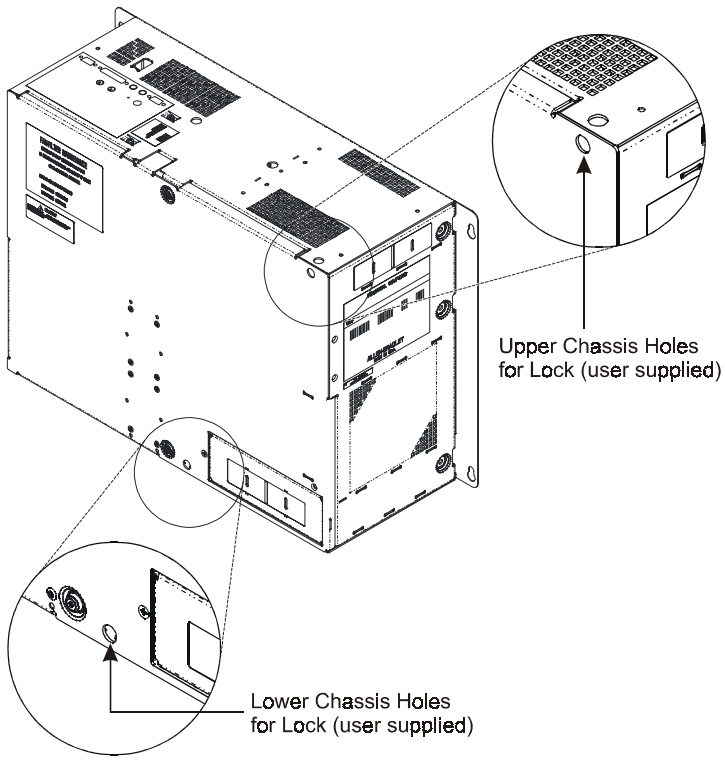
Chassis Locks

Two chassis locking holes restrict unauthorized access to the 6180 Computer internal components. Standard padlocks may be used (user supplied).

Figure 1- 17



ATTENTION: The chassis locking hole on the bottom of the chassis has been plugged with a steel cap for compliance with UL 1950 fire enclosure requirements. Removal of this plug will result in a failure to comply with UL 1950 safety requirements. It is up to the user to determine if removal of the plug raises fire containment issues with individual installation(s), and to provide suitable preventive measures as necessary.

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Installation

Chapter Objectives

This chapter describes installation of the 6180 Computer including how to:

- install the 6180 Computer in a rack
- install the 6180 Computer in a panel using mounting studs
- install the 6180 Computer in a panel using mounting clips
- change the voltage input setting

European Union Compliance

The 6180 Computer meets the European Union Directive requirements when installed within the European Union or EEA regions and has the CE mark. A copy of the Declaration of Conformity is available at the Rockwell Automation / Allen–Bradley Internet site: www.ab.com

Environmental Considerations

Mount the 6180 Computer in a panel or enclosure to protect the internal circuitry. Versions with a gasketed bezel meet NEMA Type 1, 12, 13 and 4/4X (indoor use) and IEC IP54, IP65 only when mounted in a panel or enclosure having an equivalent rating. The No Display, Metal Bezel (NDM) version has a NEMA Type 1 and IEC IP2X rating.

Allow enough room within the enclosure for adequate ventilation. Also consider heat produced by other devices in the enclosure. The ambient temperature around the 6180 Computer must be maintained between 5° and 50°C (41° to 122°F). The 6180 Computer is intended for use in Pollution Degree 2 environments.

Make sure you provide provisions for accessing the back and side panels of the 6180 Computer to install and remove components.

The 6180 Computer must be mounted in a vertical position as illustrated in this manual. Installing the 6180 Computer in any other orientation may result in overheating due to improper airflow.

ATTENTION: The bottom of the chassis has a knockout panel. This knockout was provided for special applications with other Allen–Bradley products. Do not remove this knockout. If the knockout is removed, the 6180 Computer will not meet UL 1950 standards for flammability containment.

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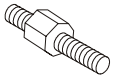
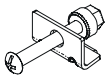
Mounting Hardware

The 6180 Computer is shipped with the following mounting hardware installed on the bezel.

Item	Description	Quantity	Use For
	1.265–inch long mounting studs with integral spacer	18	Panel or enclosure mounting
<<graphic needed>>	Self-locking nuts	18	Panel, enclosure, or rack mounting

Mounting clips can be used instead of the mounting studs and are ordered separately.

Item	Description	Quantity	Use For
	Mounting Clips Catalog No. 2711-NP1	Each Package Contains 10 Clips	Panel or enclosure mounting

Tools Required

In addition to the tools required to make the cutout, you will need the following tools:

- 3/8 inch socket
- 14 inch (36 cm) extension rod (minimum)
- Socket driver (in/lb torque wrench recommended)
- 7/32 hex wrench
- Ruler

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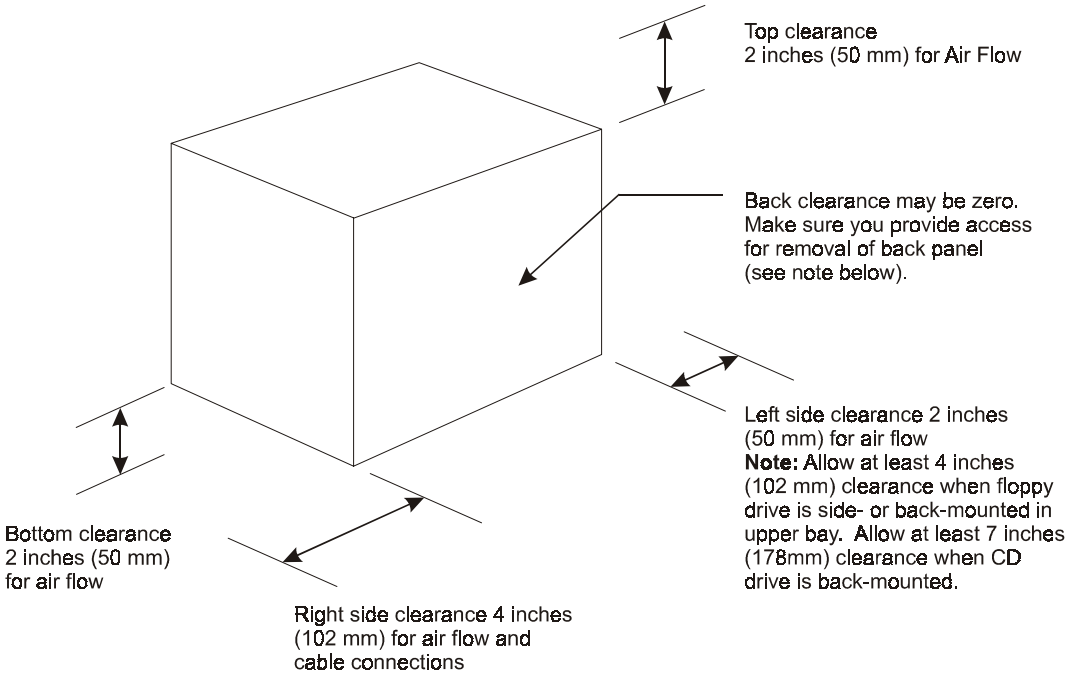
Mounting Clearances

Allow adequate space for mounting, air flow, and maintenance. The figure below shows recommended minimum clearances to other components within the rack or enclosure.

ATTENTION: The 6180 Computer should not be operated within a confined space of the dimensions shown below unless adequate ventilation or other cooling methods are used to lower the air temperature within the enclosure.

Figure 2- 1


Top clearance
2 inches (50 mm) for Air Flow
Back clearance may be zero.
Make sure you provide access
for removal of back panel
(see note below).
Left side clearance 2 inches
(50 mm) for air flow
Note: Allow at least 4 inches
(102 mm) clearance when floppy
drive is side- or back-mounted in
upper bay. Allow at least 7 inches
(178mm) clearance when CD
drive is back-mounted.
Bottom clearance
2 inches (50 mm)
for air flow
Right side clearance 4 inches
(102 mm) for air flow and
cable connections

ATTENTION: Before installing the 6180 Computer in a panel, check the clearances of any add–in boards. If your system has an Ethernet card installed, the card must be checked for clearance before installation. Failure to follow this caution may result in damage to the 6180 Computer and/or panel.

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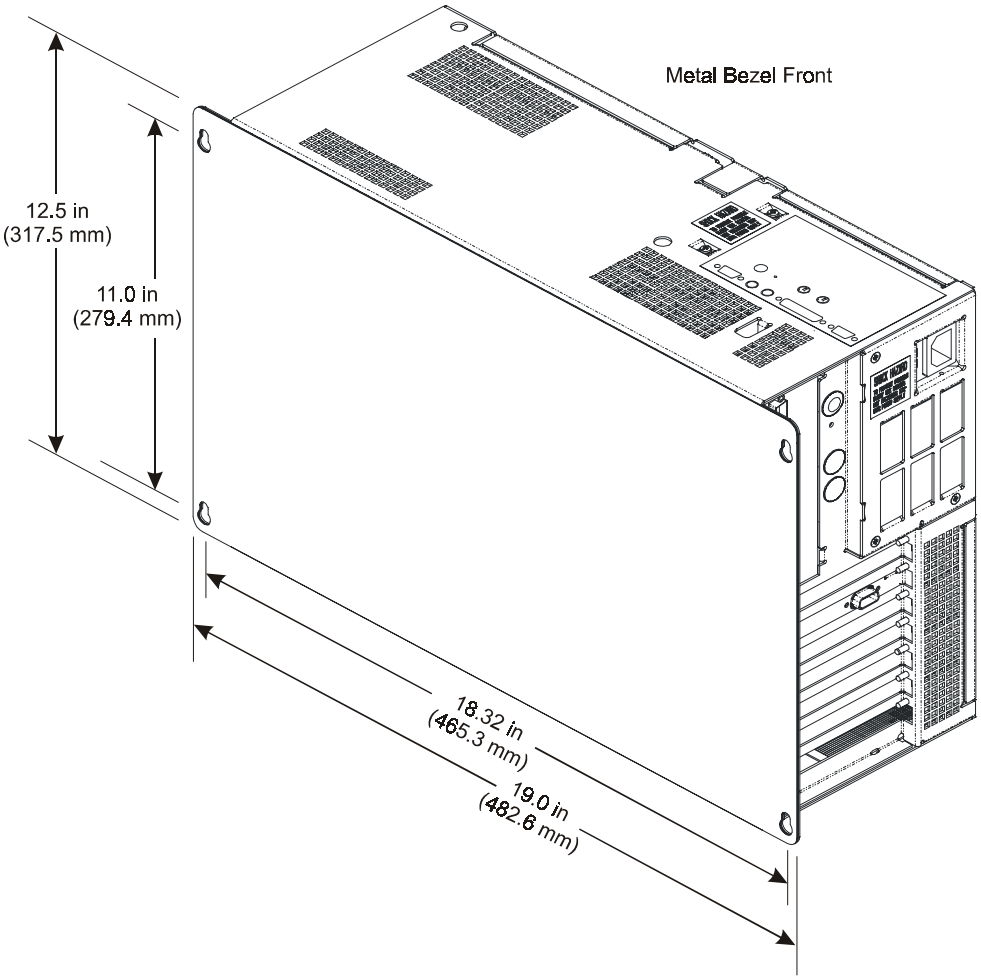
Mounting Dimensions

The following figures show the mounting dimensions.

Versions with a Metal Bezel (No Display)

Figure 2- 2



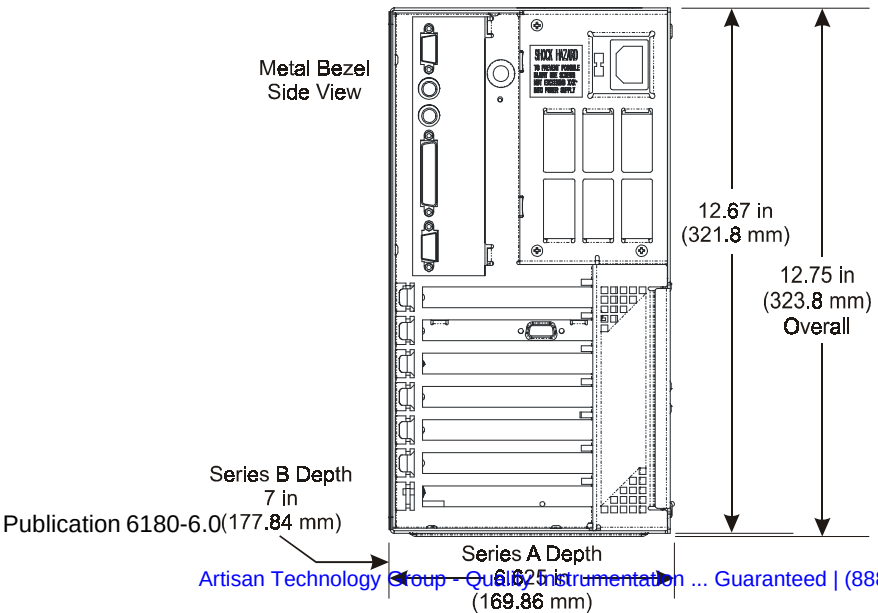


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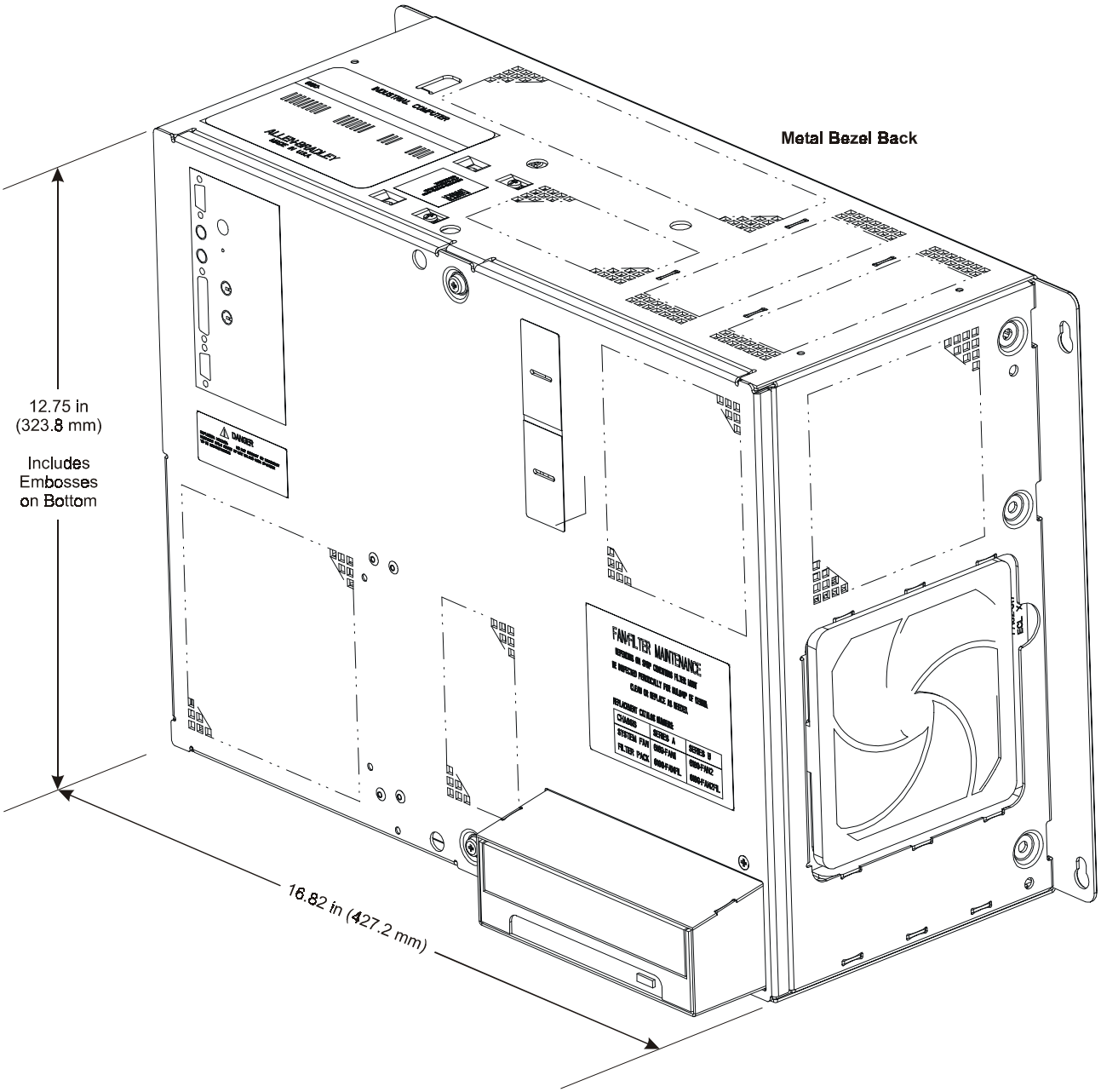
Figure 2- 3



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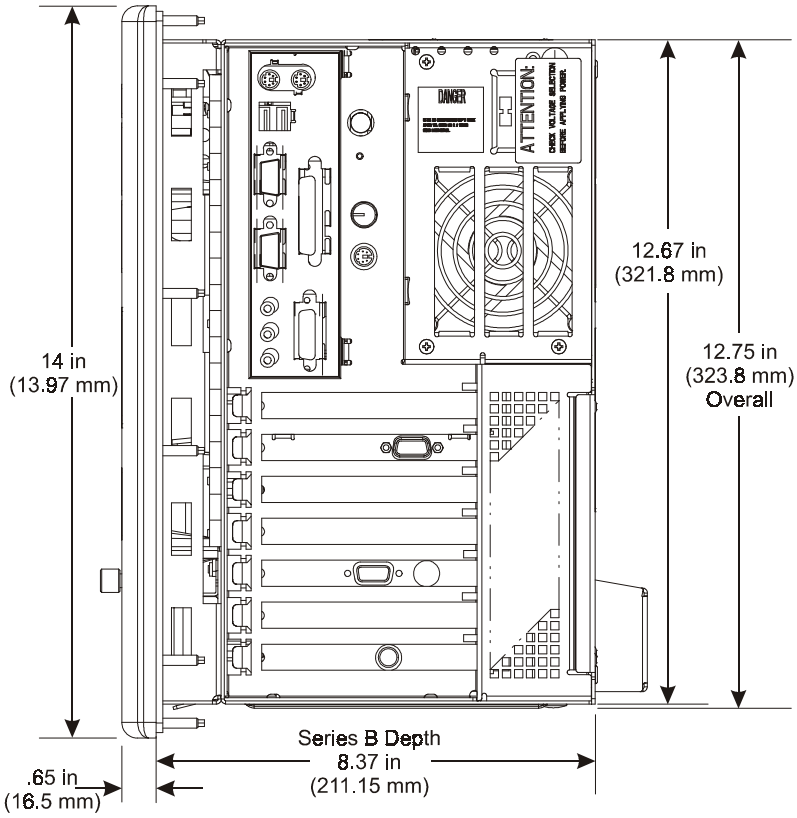
Versions with a Plastic Bezel (With or Without Display)

Figure 2- 4



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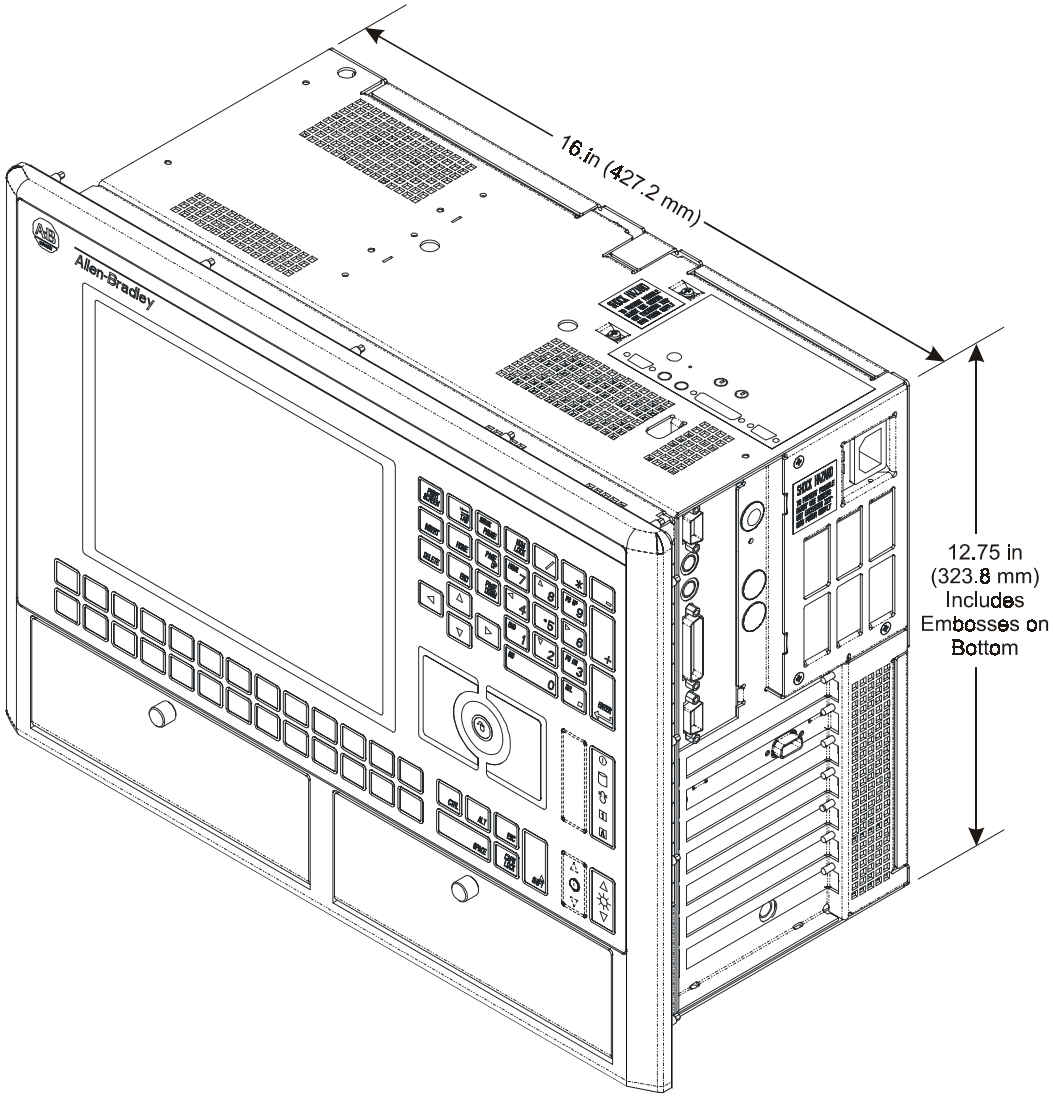
Versions with a Plastic Bezel (With or Without Display)

Figure 2- 5



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Mounting Cutout

The following figure provides the dimensions for making the panel or enclosure cutout. If you are using mounting clips, the mounting studs are removed and the 18 stud holes are not necessary.

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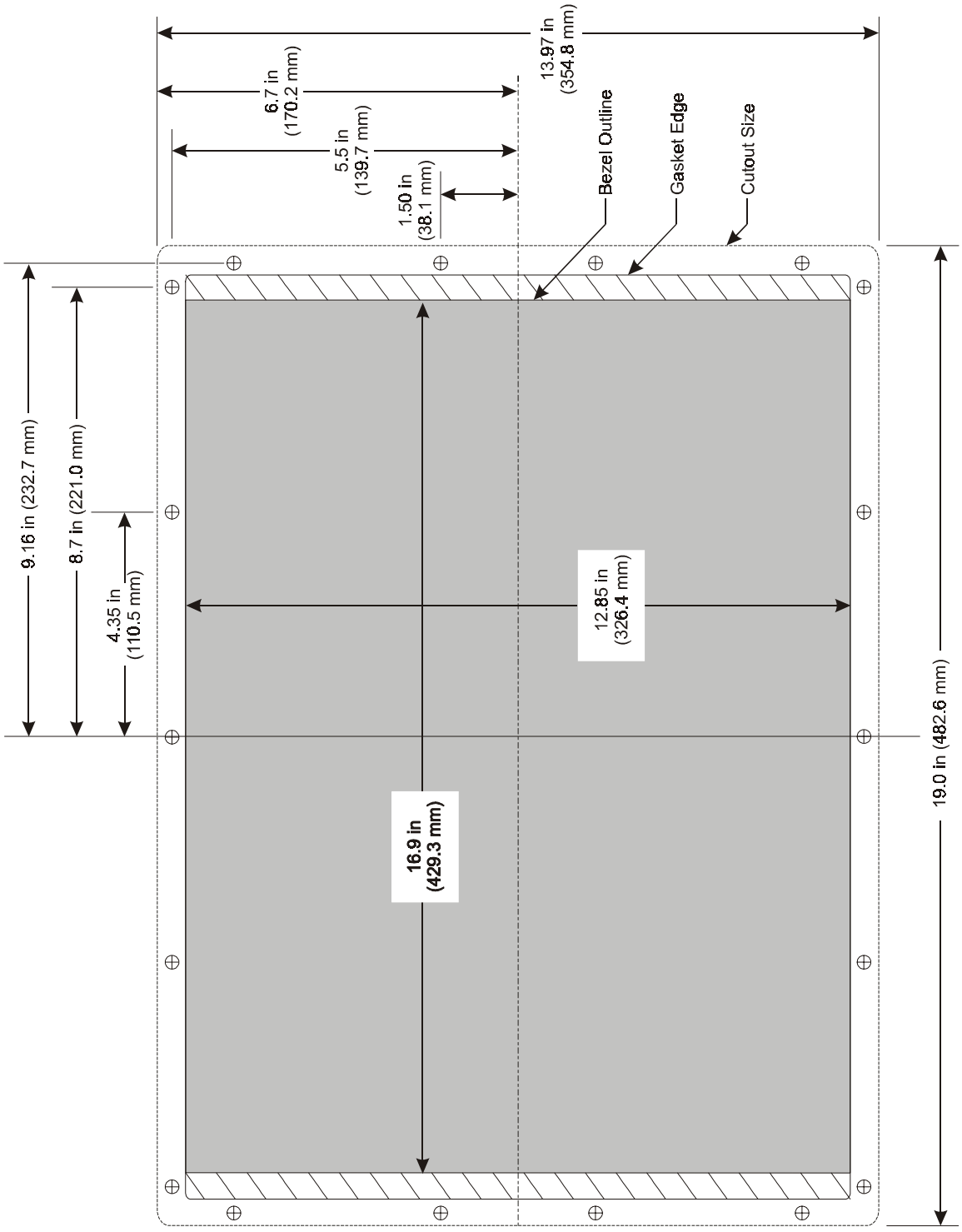
Figure 2- 6



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Panel Mounting (with Studs)

To install the 6180 Computer in a panel using 18 mounting studs:

ATTENTION: Disconnect all electrical power from the panel before making cutout.

Make sure the area around the panel cutout is clear.

Take precautions so that metal cuttings do not enter any components that are already installed in the panel.

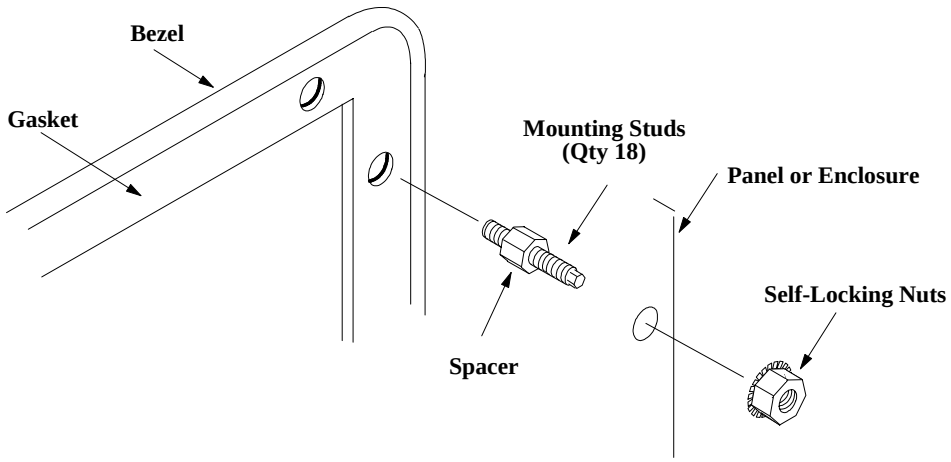
Failure to follow these warnings may result in personal injury or damage to the panel components.

To install the 6180 Computer in a panel using mounting studs:

1. Cut an opening in the panel using the panel cutout dimensions provided on page 28. Carefully drill eighteen 1/4 inch (6.35 mm) holes for studs as indicated.

2. The 18 mounting studs are factory installed. In the event studs were removed for clip mounting, you can re–install studs using a 1/8 inch socket on the end of the stud. Turn stud clockwise to tighten to approximately 10 inch pounds (1.1 N•m).

Figure 2- 7



ATTENTION: Be careful not to damage the sealing gasket when installing or removing studs. A damaged seal may result in damage to the 6180 Computer and other panel components due to a leaking seal.

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3. Make sure the sealing gasket is properly positioned on the terminal. This gasket forms a compression type seal (NEMA Type 4x), do not use sealing compounds.

4. Place the 6180 Computer in the panel cutout aligning the studs with the mounting holes. The 6180 Computer will snap into the panel as the temporary retaining tabs lock against the panel (see note following).

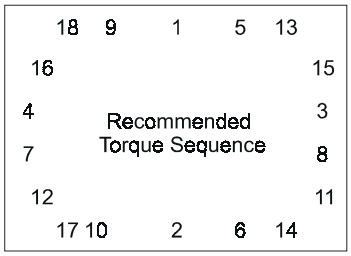
Note: Versions of the 6180 Computer designed for panel mounting have metal tabs that temporarily lock the 6180 Computer against the panel. These tabs only facilitate installation of the mounting hardware. The tabs are not designed to provide permanent mounting.

5. Install the 18 self–locking nuts hand tight.

ATTENTION: Tighten mounting nuts to a torque of 10 inch pounds (10 inch–pounds, 1.1 N•m) to provide a proper seal and prevent damage to the 6180 Computer. Allen–Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation.

6. Alternately tighten the self–locking nuts (use 3/8 inch socket) until the 6180 Computer is held firmly against the panel (see recommended tightening sequence below). The studs have an integral spacer that prevents the gasket from being over–compressed. The amount of torque required increases significantly as the gasket reaches the proper compression. Tighten nuts to a torque of 10 inch–pounds (1.1 N•m).

Figure 2- 8



Note that sequence starts at center studs and continues to the corner studies.

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Panel Mounting (with Clips)

To install the 6180 Computer in a panel using mounting clips:

ATTENTION: Disconnect all electrical power from the panel before making cutout.

Make sure the area around the panel cutout is clear.

Take precautions so that metal cuttings do not enter any components that are already installed in the panel.

Failure to follow these warnings may result in personal injury or damage to the panel components.

1. Cut an opening in the panel using the panel cutout dimensions provided on page 2-8.

2. If the mounting studs are present, they should be removed. To remove a stud, use a 1/8 inch socket and turn counterclockwise to remove.

ATTENTION: Be careful not to damage the sealing gasket when installing or removing studs. A damaged seal may result in damage to the 6180 Computer and other panel components due to a leaking seal.

3. Make sure the 6180 Computer sealing gasket is properly positioned on the terminal. This gasket forms a compression type seal, do not use sealing compounds.

4. Place the 6180 Computer in the panel cutout. The 6180 Computer will snap into the panel as the temporary retaining tabs lock against the panel (see note below).

Note: Versions of the 6180 Computer designed for panel mounting have metal tabs that temporarily lock the 6180 Computer against the panel. These tabs only facilitate installation of the mounting hardware. The tabs are not designed to provide permanent mounting.

5. Install the 10 mounting clips (Catalog No. 2711–NP1). The mounting clips slide into the slots on the sides, top and bottom of the 6180 Computer as indicated by the arrows shown on the following diagram (3 top, 3 bottom, 2 sides). Gradually tighten the clips one at a time around the bezel (see tightening sequence next page). Repeat this process at least three times until the clips are hand tight and the gasket is compressed uniformly against the panel.

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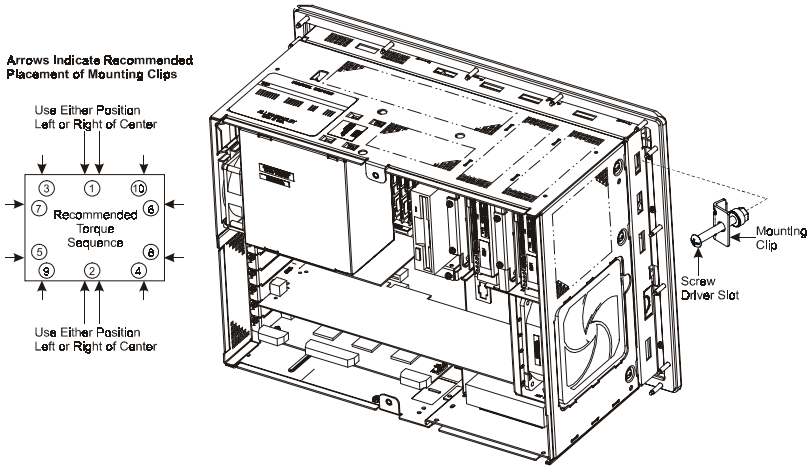
Figure 2- 9


Arrows Indicate Recommended Placement of Mounting Clips
Use Either Position Left or Right of Center
Recommended Torque Sequence
Use Either Position Left or Right of Center
Mounting Clip
Screw Driver Slot

6. Tighten mounting clips to a torque of 10 inch–pounds (1.1 N•m) in the sequence shown above. Do not over–tighten.

ATTENTION: Tighten mounting clips to a torque of 10 inch pounds (1.1 N•m) to provide a proper seal and prevent damage to the 6180 Computer. Allen–Bradley assumes no responsibility for water or chemical damage to the terminal or other equipment within the enclosure because of improper installation.

Note: The mounting clips on the hinge side interfere with the opening of the hinge. Remove the clips before opening the hinge.

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Rack Mounting

The 6180 Computer mounts in a standard EIA 19 inch (48.3 cm) rack. The 6180 Computer occupies 8U EIA units.

Rack Mounting Guidelines

Observe the following precautions before installing the 6180 Computer in a rack:

Disconnect all electrical power from the rack before installing the 6180 Computer.

If installing the 6180 Computer in an enclosed rack, make sure the ambient temperature stays within 5° to 50° C (41° to 122° F). Be aware of other nearby devices which may raise the ambient temperature in the rack. Make sure there is adequate room for air flow through the 6180 Computer chassis vents.

Verify that the addition of the 6180 Computer does not cause uneven loading (instability) of the rack.

Check that the power supply limits for the rack components will not be exceeded by the addition of the 6180 Computer.

Make sure the installation of the 6180 Computer maintains proper earth grounding of the rack components. The 6180 Computer requires connection to a power source having an earth ground (three prong outlet).

Failure to follow these warnings may result in personal injury or damage to the rack components.

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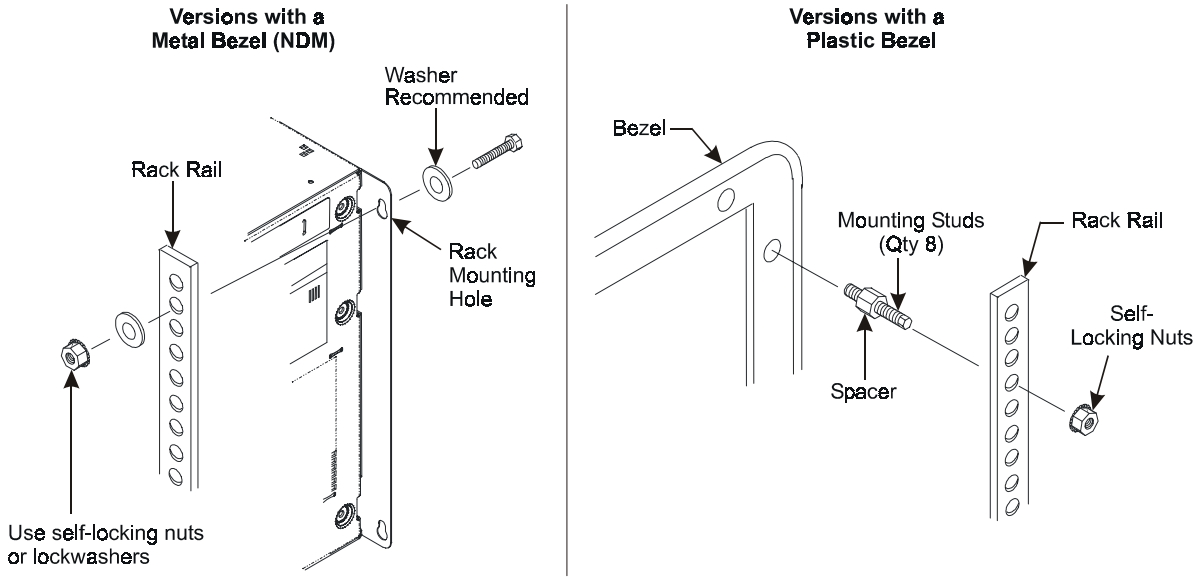
Rack Mounting Procedures

To install the Plastic Bezel versions of the 6180 Computer in a rack:

Note: The metal bezel versions of the 6180 Computer have mounting holes in the bezel. User must provide rack mounting hardware (see example illustrated next).

1. The 18 mounting studs are factory installed. In the event studs were removed for clip mounting, you can re–install studs using a 1/8 inch socket on the end of the stud. Turn stud clockwise to tighten to approximately 10 inch pounds (1.1 N•m).

Figure 2- 10



2. Place the 6180 Computer in the rack aligning the studs with the mounting holes.

3. Install the 8 self–locking nuts hand tight.

4. Alternately tighten the self–locking nuts until the 6180 Computer is held firmly against the rack. Tighten nuts to a torque of 10 inch–pounds (1.1 N•m).

Connecting a Mouse & Keypad (Side Panel)

The mouse and keyboard plug directly into the side panel mouse and keyboard ports, or the front panel connectors as shown below. When connected to the processor board ports, it does not matter if the keyboard

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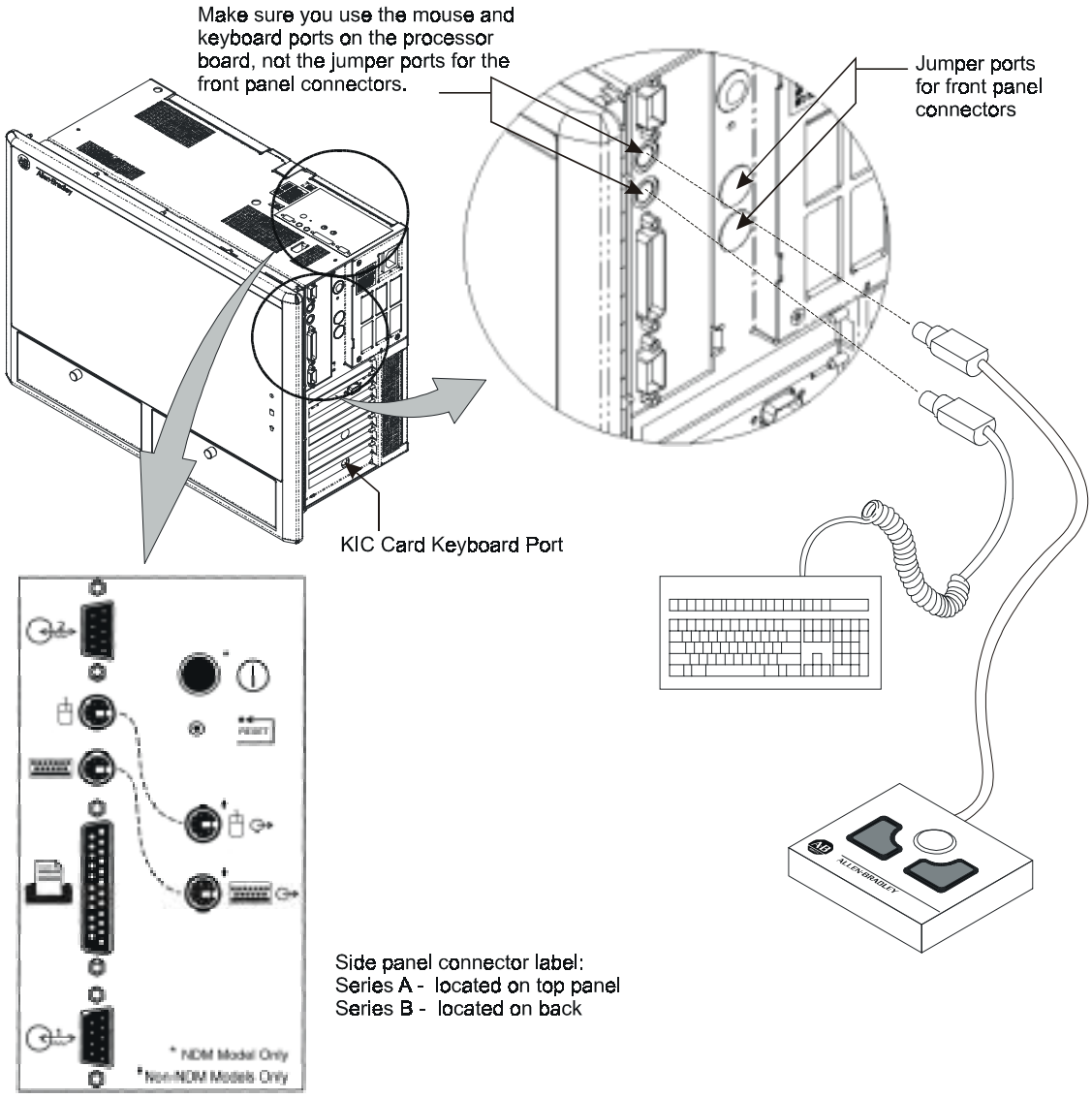
and mouse cables are interchanged, the 6180 Computer will automatically detect them.

Figure 2- 11


Make sure you use the mouse and keyboard ports on the processor board, not the jumper ports for the front panel connectors.
Jumper ports for front panel connectors
KIC Card Keyboard Port
Side panel connector label:
Series A - located on top panel
Series B - located on back
* NDM Model Only
* Non-NDM Models Only

Important: If the mouse and keyboard are connected to the side panel connectors, the keypad (if present) on the front of the 6180 Computer is disabled. The mouse and keyboard jumpers must be installed for operation of the keypad (see next page).

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Note: The Keyboard Interface Card (KIC) has a keyboard connector. If you use the processor board or front panel keyboard/ mouse connectors, the KIC keyboard port is overridden (disabled).

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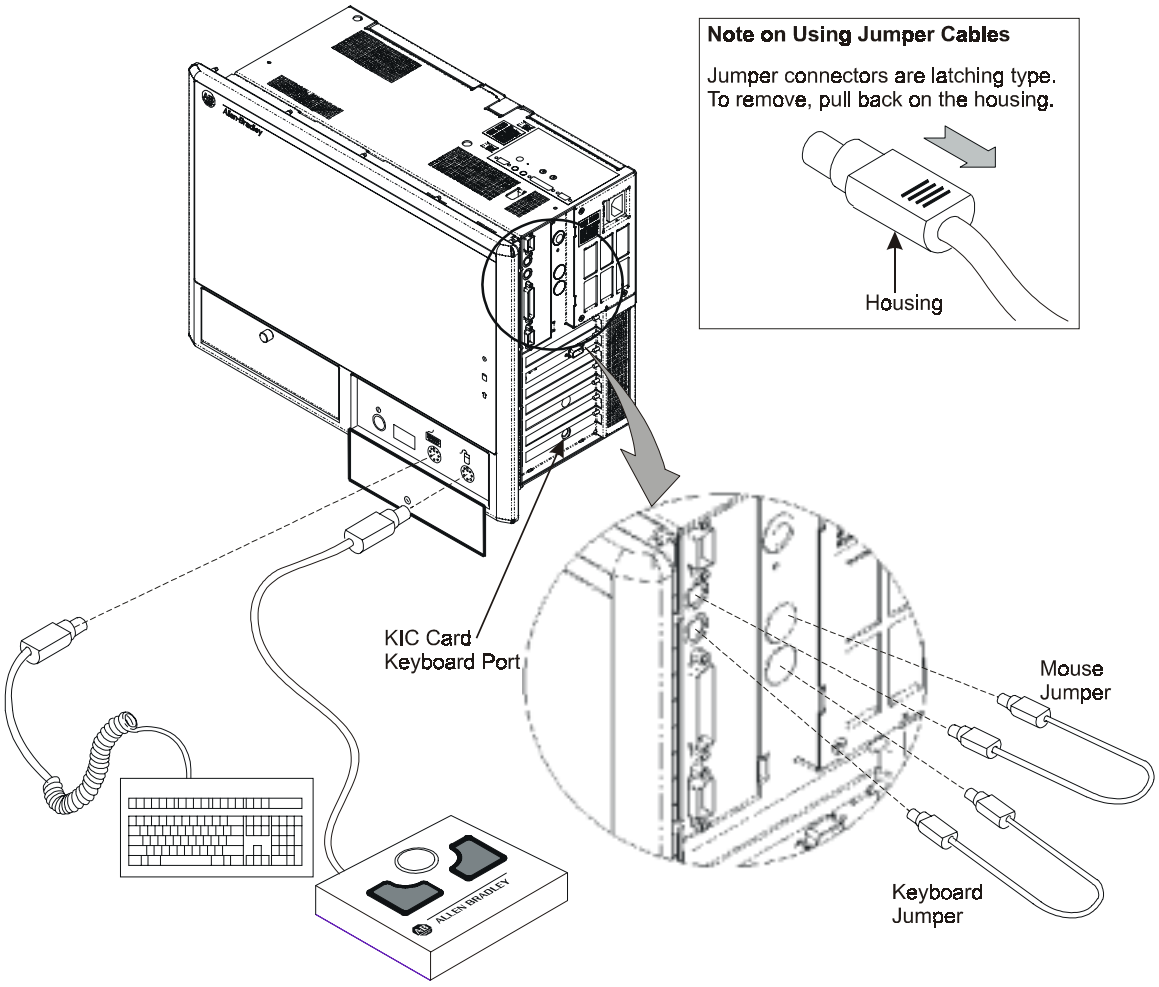
Connecting a Mouse & Keyboard (Front Panel)

If you are using the front panel connectors, you must install jumper cables as shown below. These jumpers route the keyboard and mouse ports from the processor board to the front panel connectors. Make sure the correct ports are used.

Figure 2- 12



ATTENTION: When a keyboard or mouse is connected to the front panel connectors, you lose the NEMA 4x and NEMA 12 rating while the access door is open.

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Note: The Keyboard Interface Card (KIC) has a keyboard connector. If you use the processor board or front panel keyboard/ mouse connectors, the KIC keyboard port is overridden (disabled).

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Indirect Motherboard Connections

Add text……

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Power Connections (6180 AC unit)

A standard IEC 320 power cord provides power to the 6180 Computer. The power supply input will accept 120/240V AC.

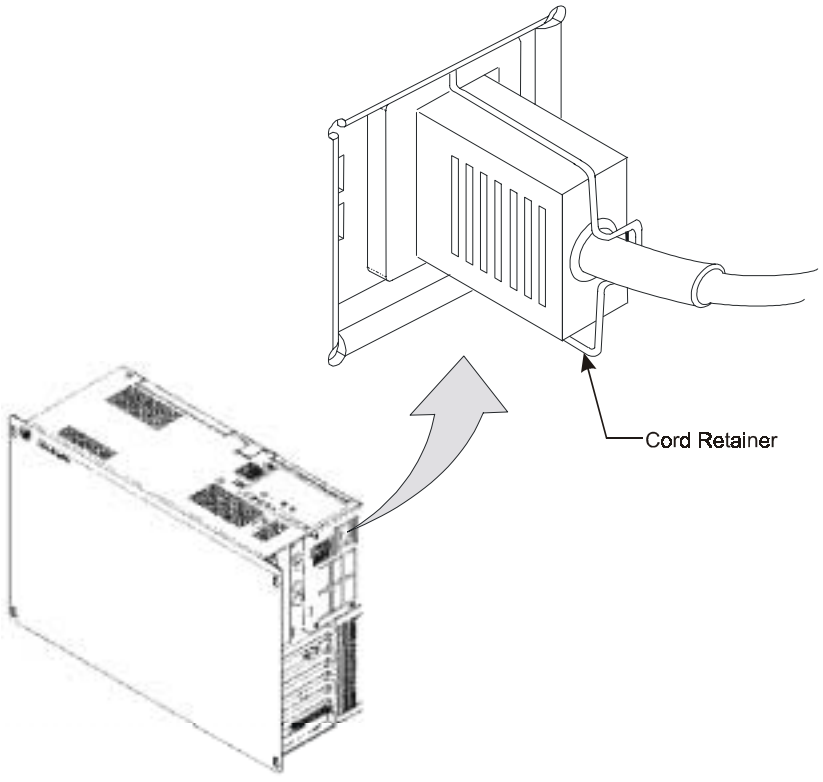
ATTENTION: If the power supply has a manual input voltage selection switch, check voltage selection before applying power.

ATTENTION: The power cord must be connected to an outlet having an earth ground (three prong outlet). Failure to follow this warning could result in severe electrical shock.

Use the cord retainer to prevent accidental interruption of power to the 6180 Computer. Pull the cord retainer over the cord plug as shown below.

The following illustration pertains to 6180 Computers equipped with a Pentium Class CPU.

Figure 2- 13



[1] The power cord connector is recessed on 6180 Computers equipped with a Pentium III CPU.

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Power Connections (6180 DC unit)

A standard IEC 320 power cord??? provides power to the 6180 Computer. The power supply input will accept ?????.

Configuring the Power Supply Jumper

The 6180 Computer 120/240VAC power supply can be configured to either power up using the on/off switch, or to automatically turn on when AC power is applied to the unit. An internal jumper on the power supply wiring harness controls the configuration. The factory default setting enables the on/off switch. To change the configuration, perform the following steps:

1. Remove power from the 6180 Computer. Disconnect the power cord.

2. Remove the 6180 Computer back cover. Locate the power supply, and look for a single white wire not connected on the power supply wiring harness. The white wire is shipped not connected from the factory, because this position enables the power switch to be used.

3. If the power switch bypass mode is desired, then connect the white wire to its mating connector.

4. Replace the back cover. Reconnect power to the 6180 Computer.

5. Press and hold the on/off switch for at least 10 seconds.

6. Unplug the 6180 Computer and wait 5 seconds before plugging back in. This clears the soft-start logic on the 6180 Computer motherboard.

7. Plug in the unit again. The on/off switch bypass mode is enabled.

When using Microsoft Windows NT, a normal shut down and power cycle will restart the computer regardless if the computer needs the power button turned back on; steps 2 and 3 need to return to bypass mode. A power outage in Windows 95/98 will still automatically reboot the computer.

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Initial Operation and Setup

Chapter Objective

This chapter provides information on:

- Operating recommendations
- Bootup sequence
- System reset and power on/off buttons
- System hot keys

Operating Objectives

We recommend these operating guidelines:

- Avoid turning the system on and off frequently.
- Never turn the system off when the hard drive indicator light is illuminated.
- After shutting the system off, do not turn it back on again until the hard drive has come to a complete stop (about 30 seconds).
- If using an external monitor, turn on the monitor first.
- Always use the proper power down procedures as required by your operating system such as the Shut Down command in the Microsoft Windows operating system.
- Do not operate the 6180 Computer without the back panel installed. An electrical shock hazard exists. In addition, removing the back panel disrupts air flow and may result in overheating. The back panel also functions as an EMI shield.

Operator Access

Operator access is limited to the front panel of the 6180 Computer. This includes the display, front panel, keys, and front panel doors (accessory drive and mouse/keyboard connectors). Access to components behind the rack or panel that the 6180 Computer is installed in is restricted to authorized and properly trained personnel.

ATTENTION: Operator access is limited to the front panel controls and access doors of the 6180 Computer. Failure to observe this caution could result in severe electrical shock and/or damage to the 6180 Computer.

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Keypad Operation

If your computer has a front panel keypad, note the following:

- Mouse and keyboard jumpers must be installed to activate the front panel, keypad, and mouse (see page 2-17).
- The KIC card has a jumper (P1) that enables/disables the keypad. The default position is enabled (pins 2–3 jumpered). For more information, refer to Chapter 13, Keyboard Configuration Utility.

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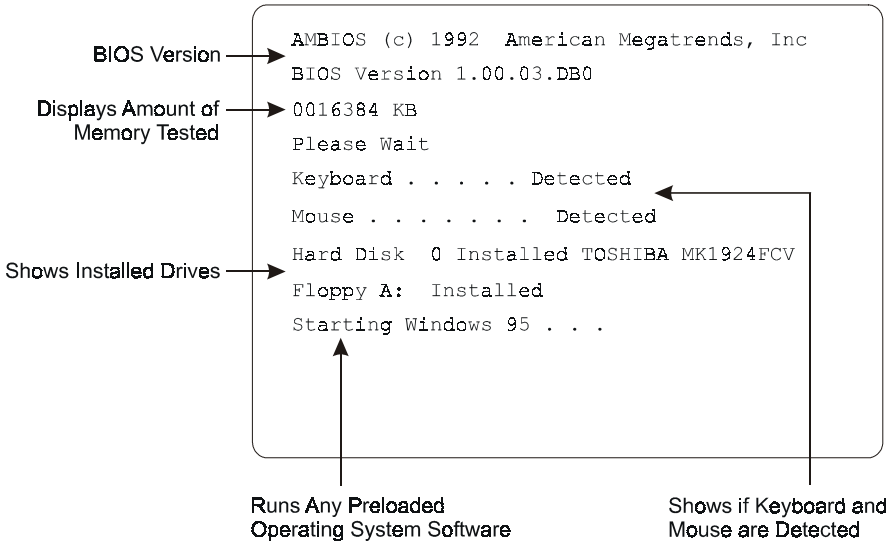
System Checkout

To boot up the system:

1. Apply power and press the on/off button. The 6180 Computer performs a Power On Self Test (POST) in which it tests the processor board, memory, keyboard, and certain peripheral devices.

2. The 6180 Computer displays the progress of the POST and initialization of accessory devices. This display varies depending on the system configuration and BIOS version, but will look similar to this:

Figure 3- 1


AMBIOS (c) 1992 American Megatrends, Inc
BIOS Version 1.00.03.DB0
0016384 KB
Please Wait
Keyboard . . . . . Detected
Mouse . . . . . Detected
Hard Disk 0 Installed TOSHIBA MK1924FCV
Floppy A: Installed
Starting Windows 95 . . .
BIOS Version
Displays Amount of Memory Tested
Shows Installed Drives
Runs Any Preloaded Operating System Software
Shows if Keyboard and Mouse are Detected

3. If your system does not boot up, or you notice other problems, refer to Chapter 15, System Troubleshooting.

4. The 6180 Computer will then run any preloaded operating system software such as Windows 95/98 or Windows NT. If no operating system is preloaded, the following prompt is displayed:

```
Insert bootable media in the appropriate drive.
```

System Reset

The three ways to reset the 6180 Computer are to:

- use the side mounted CPU reset button
- press [Ctrl] [Alt] [Delete]

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- use power switch on front or side panel

After resetting, the 6180 Computer will begin the Power On Self Test (POST). During reset, the 6180 Computer:

- clears RAM
- starts the POST
- initializes peripheral devices, such as drives and printers
- loads the operating system (if pre–loaded)

System Hot Keys

The keyboard controller supports the following hot key sequences:

Use this key sequence:	To:
[Ctrl][Alt][Del]*	Perform a software reset of the system.
[Ctrl][Alt][+]	Set the system to turbo mode (Default setting). In turbo mode, the system bootup occurs at full speed. Switching to turbo mode may be prohibited by the operating system, or when the CPU is in protected mode or virtual x86 mode under DOS.
[Ctrl][Alt][–]	Set the system to deturbo mode. In deturbo mode, the system operates at a slower speed (emulating a 23 MHz AT).
[Ctrl][Alt][Defined in Setup]	Enter energy saving standby mode. Standby mode reduces the system's power consumption while still responding to external interrupts, such as FAXs or network messages. Any keyboard or mouse activity brings the system out of standby mode. The Power Management hot key is defined in the Advanced screen of the Setup program.
[Ctrl][Alt][Defined in Setup]	Lock the keyboard (and clear the screen) until a User Password is entered. The keyboard LEDs flash to indicate the keyboard is locked. After entering the User Password, you do not have to press the [Enter] key. The security hot key is entered in the Security screen of the Setup program. The security hot key will not function unless a User Password is also defined in the Security screen of the Setup program.
* May be inhibited (user configured) through KCU. The default is Ctrl-Act-Del enabled.	

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Legend Strip for Configurable Keypad

The 6189-KEYKIT1 legend kit contains legend strips for the following computers:

Computer Catalog Number	Computer Type	Keypad
6180-xxCxxxxxxx 6180-xxDxxxxxxx	6180 Industrial Computer, 10.4 inch Color Screen	Standard
6180-xxGxxxxxxx	6180 Industrial Computer, 10.4 inch Color Screen	Full Alphanumeric
6180-xxLxxxxxxx 6180-xxMxxxxxxx	6180 Industrial Computer, 12.1 inch Color Touchscreen	Standard
6180-xxHxxxxxxx 6180-xxIxxxxxxx	6180 Industrial Computer, 15 inch Color Touchscreen	Standard

The 6180 Computer models 6180-xxC, -xxD, xxG (with 10.4 inch screen) are provided with a keypad strip installed displaying function key labels F1 - F12 and S1 - S12. The reverse side of this strip has labels for letters A - Z. Custom legend strips can also be created using blank legend labels.

The 6180 Computer models 6180-xxL and -xxM (with a 12.1 inch screen) are provided with an alpha keypad strip installed. The reverse side of this strip has labels for function keys F1 - F12 and S1 - S12.

The 6180 Computer models 6180-xxH and -xxI (with a 15 inch screen) are provided with an alpha keypad strip installed. The reverse side of this strip has labels for function keys F1 - F12 and S1 - S12.

Legend kit contents

The Legend Strip Kit (Catalog No. 61 89-KEYKIT1) contains legend strips for both the standard and full alphanumeric keypad versions of the 6180 Computer. The standard keypad legend strips are longer than the strips for the full alphanumeric keypad. The kit contains:

- Two preprinted legend strips for standard keypads. These strips are preprinted on both sides. One side has function key labels. The reverse side of this strip is preprinted with labels for letters A-Z.
- Three blank legend strips for standard keypads. The strips are blank on both sides and may be marked for custom legends.
- Three Preprinted/Blank legend strips for full alphanumeric keypads. These strips are preprinted on one side with function key labels Fl — F20. The reverse side of the strips are blank for marking custom legends.

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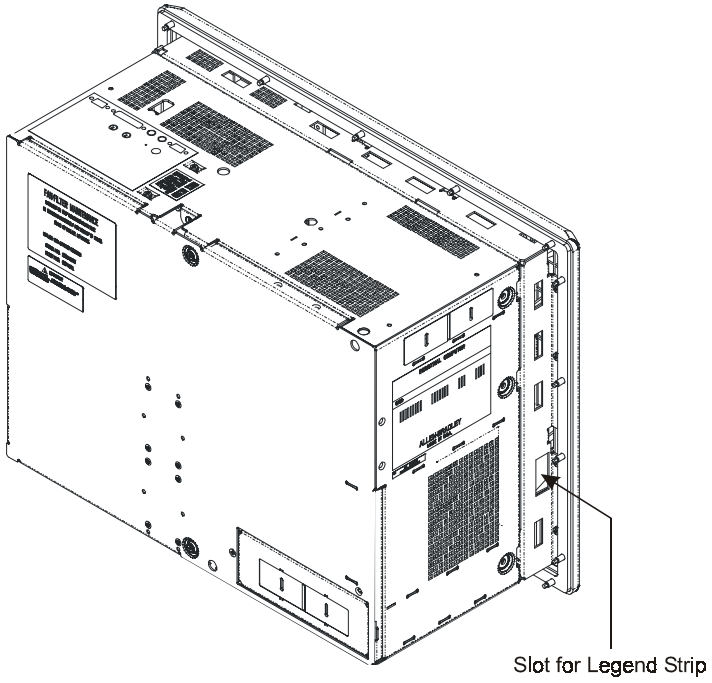
Marking the legend strip

When custom labeling the legend strips, use an indelible type of marker. All printing must appear within the white text areas. We recommend that you test print the legends on a separate sheet of paper to verify that the insert has adequate space for the legends.

To reverse or change a legend strip:

1. Carefully pull the legend strip from the left side behind the bezel.

Figure 3- 2



2. If you are using the blank legend strips, mark the legends on the matt surfaces provided for marking.

3. Re–insert the tab into the slot. Here are some helpful hints:

   - Grip the legend strip near the point where the strip enters the slot and use short “pushes”. This helps prevent buckling of the legend strip.

   - It may be helpful to “cup” the legend strip slightly as you hold it. This will stiffen the legend strip and also prevent buckling.

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Using IrDA

The IrDA receiver / transmitter (version 2.0 compatible) located behind the front connector access panel or directly on the front panel overlay (see pages 1–6 and 1–11) allows you to communicate with other devices also having an IrDA receiver / transmitter, such as printers or note book computers. The IrDA link has a maximum baud rate of 115 kilobytes/sec. Both devices must be no more than 1 meter apart.

Also note the following when using IrDA:

- Microsoft Windows needs to be configured for IrDA support (software drivers loaded into operating system).
- In BIOS setup, the Serial Port 2 IR Mode (in Peripheral Communication submenu) must be enabled.
- You must be running a software application that uses IrDA.

Using USB

Some 6180 motherboards are provided with USB connectors.

The Universal Serial Bus (USB) is an external bus standard that supports data transfer rates of 12Mbps (12 million bits per second). A single USB port can be used to connect up to 127 peripheral devices, such as mice, modems, and keyboards. USB also supports Plug-and-Play installation and hot plugging.

Refer to the USB peripheral documentation for installing any required software on the 6180 Computer. Microsoft Windows 95, Windows 98, and Windows 2000 operating systems offer plug and play support for USB devices.

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Adding and Removing System Components

Chapter Objective

This chapter describes how to remove and install:

- back panel and accessory drive cover
- add–in boards
- processor board

Safety Precautions

The 6180 Computer contains line voltages. Make sure you disconnect all power to the 6180 Computer before performing any of the operations described in this chapter.

ATTENTION: Disconnect all power from the 6180 Computer before removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer.

ATTENTION: Wear an ESD wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the 6180 Computer and components.

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Removing the Back Panel and Accessory Drive Cover

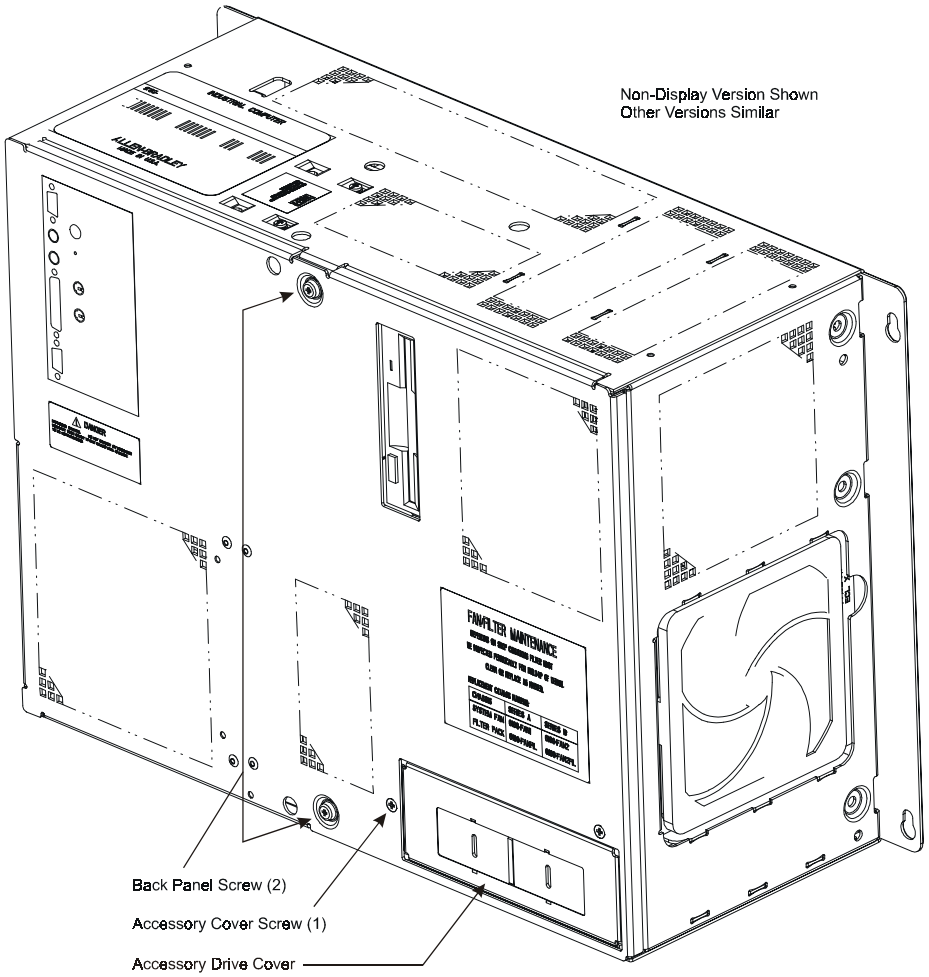
This section shows how to remove the back cover to access internal components.

ATTENTION: Review safety precautions on page 4-1 before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the 6180 Computer.

To remove the back panel:

1. Disconnect power from the 6180 Computer.
2. Loosen the 2 screws securing the back panel. The screws are retained and cannot be removed from the panel.

Figure 4- 1



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3. To re–install back panel, position back panel tabs over the chassis and tighten the 2 screws (6-8 in./lb.)

Adding and Removing Add-in Boards

ISA compatible boards may be installed in any of the ISA slots or the ISA/PCI shared slot. PCI compatible boards may be installed in any one of the PCI slots or the ISA/PCI shared slot.

Note: If a floppy or other device is installed in the lower bay, the lower three slots are restricted to half-length cards.

Refer to the ***Processor Board manual*** for the type and number of slots supported by your computer.

ATTENTION: Review safety precautions on page 4–1 before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the 6180 Computer.

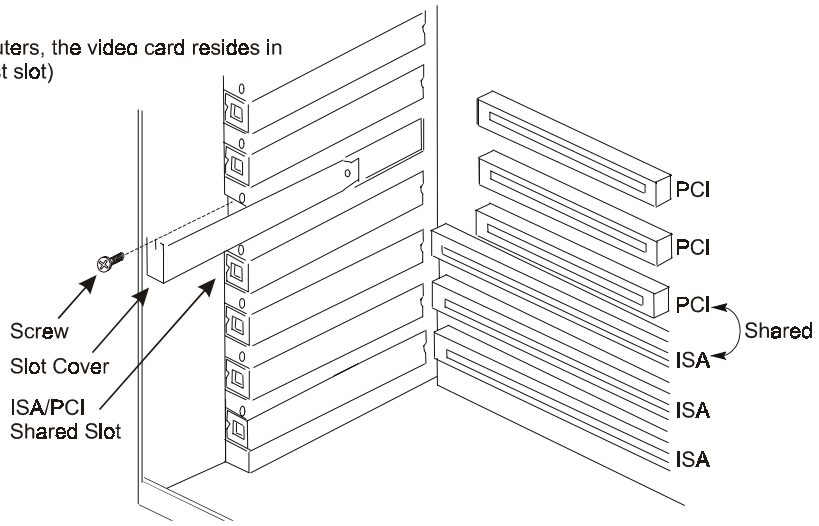
ATTENTION: Add-in boards may be sensitive to ESD and require careful handling. Hold boards only by the edges, do not touch connectors. After removing a board, place the board on a flat static free surface, component side up. Do not slide the board over any surface.

To remove a slot cover (to add a board):

Figure 4- 2

Note: When shipped from Allen-Bradley, the top PCI slot is used by the video card (if order) and the Keyboard Interface Card (KIC) is installed (on versions with a display only) in the bottom ISA slot. Other slots may also have cards installed depending upon your system configuration.

For Pentium III computers, the video card resides in the AGP slot (top most slot)



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1. Remove the back panel. See page 4-2.

2. Locate the slot cover you want to remove. We recommend that you remove adjacent add–in boards.

3. Remove the screw securing the slot cover and remove cover.

To install a slot cover (after removing a board)

1. Insert the end of the cover into the slot in the chassis.

2. Install the screw securing the slot cover, tighten to 6–8 in–lbs (.7–.9 N•m)

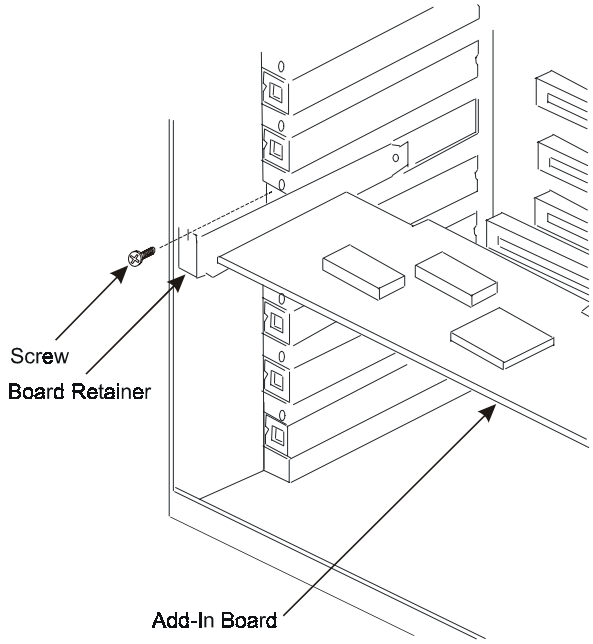
To install an add–in board:

1. Remove the board from its anti–static packaging and place on a grounded, static free surface.

2. Set any board jumpers or switches as described in the instructions for the board.

3. Hold the board by the edges and firmly press the board into the connector on the processor board.

Figure 4- 3



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4. Align the notch in the board retainer with the threaded hole and install the screw. Hold the notch tightly against the screw before tightening (6-8 in./lb.).

Note: If you do not install the retainer tight against the screw, you may have problems inserting an adjacent board.

5. Connect any board cables (if required).

6. Install the back panel. See page 4-2.

To remove an add–in board:

1. Disconnect the cables to the Keypad Interface Card (KIC) and video card.

2. Remove the screw securing the board retainer.

3. Hold the board at each end and carefully rock the board back and forth until the edge connectors pull free.

4. Store the board in an anti-static wrapper.

5. Remove any unused cable associated with the board.

6. Install a slot cover over the open slot.

Installing and Removing the Processor Board

Removal of the processor board may be required for repairs or future board upgrades.

Refer to the Processor Board Manual for board specifications.

ATTENTION: Disconnect all power from the 6180 Computer before removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer.

Wear an ESD wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the 6180 Computer and components.

To remove the processor board:

1. Remove the back panel. See page 4-2.

2. Remove the power supply. See page 9-1.

3. Remove all add-in boards. See page 4-7.

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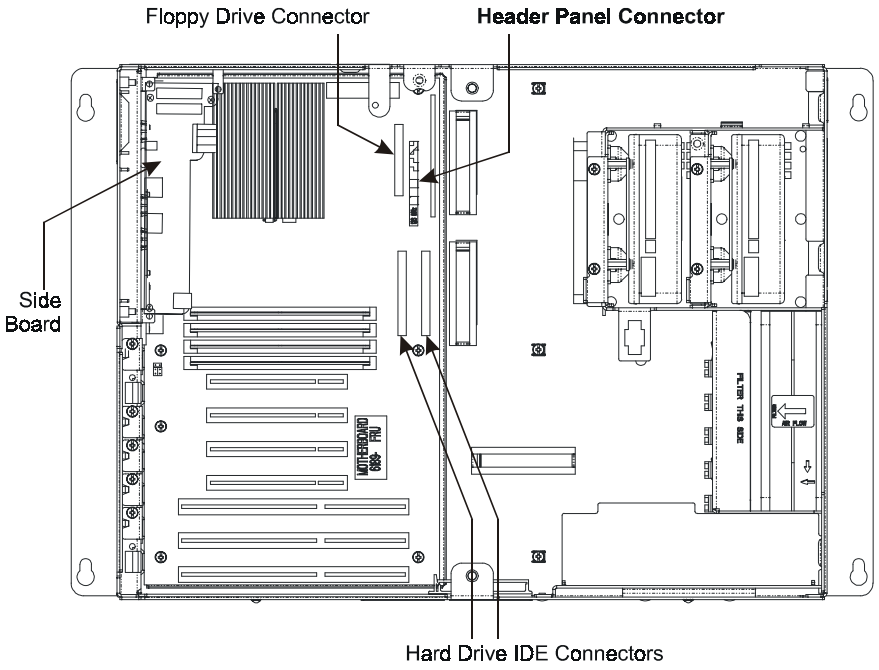
Figure 4- 4



NOTE: The Pentium Class system is shown. The Pentium II system is similar.

4. Disconnect the hard drive IDE cable connector.

5. Disconnect the floppy drive connector.

6. Disconnect the front header panel connector.

7. The side board (shown previous page) restricts access to the upper left mounting screw of the processor board. Remove the 3 screws that secure the board, you do not need to unplug any connectors from the side board. Gently move the side board to allow access to the processor board (upper left) mounting screw.

8. Remove the screws that secure the processor board and remove the board. Place board in an anti–static wrapper.

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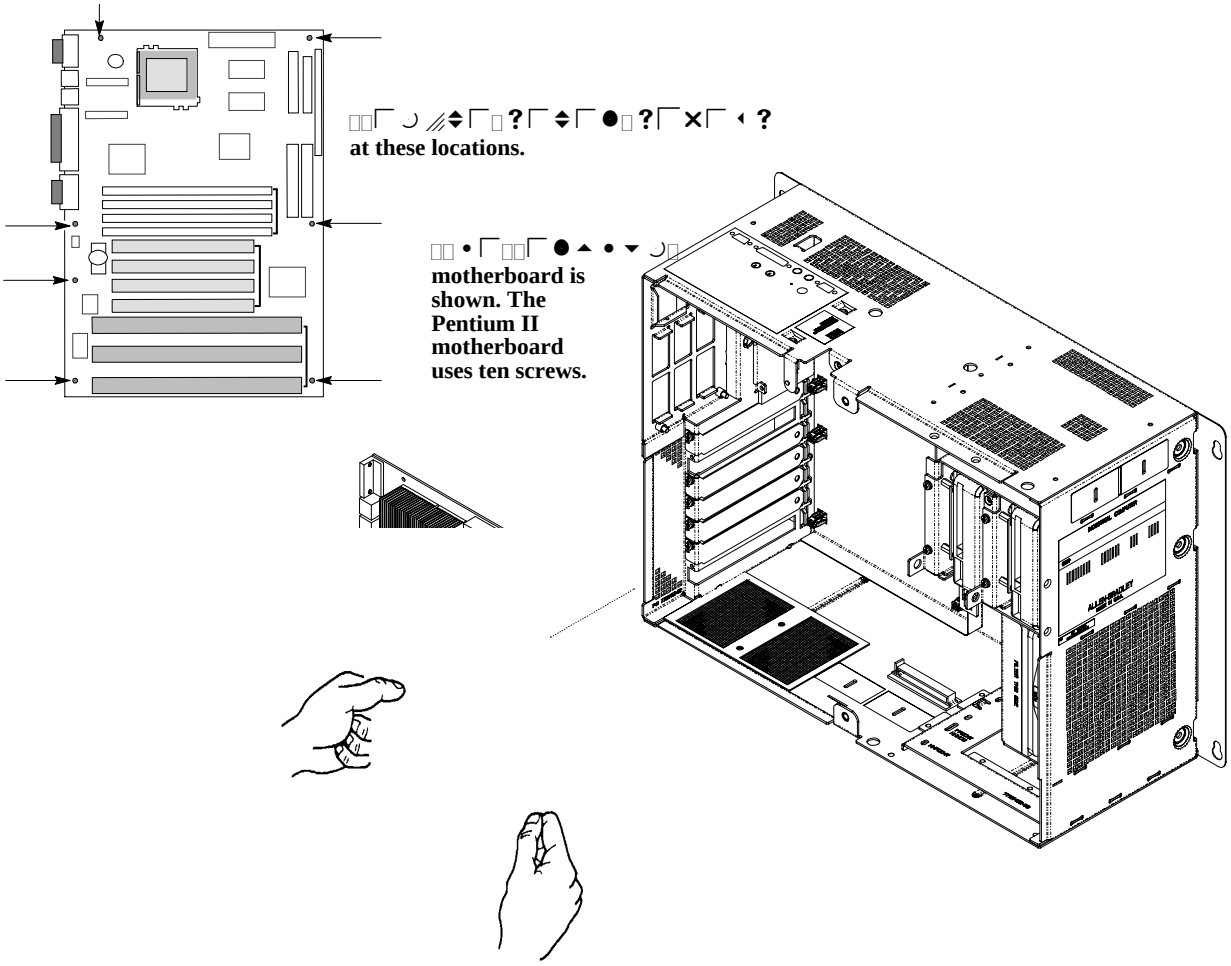
Figure 4- 5



To install the processor board:

1. Position the board in the chassis and align the screw holes with the stand–off spacers on the chassis.

2. Secure the processor board with the 6 screws (shown above). Tighten screws to 6–8 inch–pounds (.7 to .9 N•m).

3. Secure the side board with the 3 mounting screws. Tighten screws to 6–8 inch–pounds (.7 to .9 N•m).

4. Connect all cables and connectors including the IDE drive cable and front header panel connectors.

5. Install all add–in boards. See page 4-7.

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6. Install the power supply. See Chapter 9.

7. Install the back panel. See page 4-x.

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Adding and Removing Memory

Chapter Objective

This chapter describes how to remove and install memory.

Memory Overview

Available RAM Memory

The Pentium III processor board has three 168–pin sockets supporting 8 to 512 Megabytes (MB) of synchronous DRAM (SDRAM) in Dual Inline Memory Module (DIMM) packaging format.

The ITOX P3/Celeron board supports:

- 16-512 MB using unbuffered DIMMs

The ITOX P3/Celeron board:

- Uses x64 or x72 PC-66 SDRAM DIMMs for 66 Mhz FSB CPUs, or
- Uses x64 or x72 PC-100 SDRAM DIMMs for 100 Mhz FSB CPUs
- ECC supported with x72
- All DIMMs must be 3.3V

These sockets support the following DIMMs, arranged in banks 0, 1, and 2:

Pentium III
(Use gold-plated DIMMs)

Memory Module (DIMM)	Catalog No.	ECC/Non-ECC	Clock Frequency
64 MegaBytes SDRAM	6189–DIMM64	ECC	100 Mhz
128 MegaBytes SDRAM	6189–DIMM128	ECC	100 Mhz

The minimum memory size is 64MB (one 64MB DIMM). The maximum memory size is 512MB (two 128MB and one 256MB DIMMs) for Pentium II boards.

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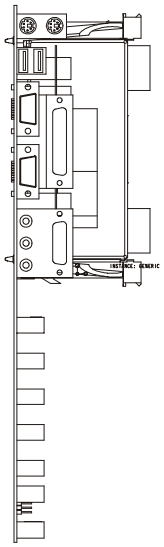
Figure 5- 1



Both ECC and non-ECC DIMMs are supported. However, for ECC operation to be available exclusively, ECC DIMMs (x72) must be installed in the system. Additionally, the user must enable the ECC Configuration feature in the CMOS setup utility. The options are “Non-ECC” (BIOS default) and “ECC”.

Setup Utility Mode Option	Disabled	Parity	ECC
Non-parity DIMMs	No error detection	N/A	N/A
Parity DIMMs	No error detection	Single-bit error detection	Single-bit error correction Double-bit error detection

Note: If any non–parity DIMMs are added, system parity is disabled for all banks (even if one bank contains parity DIMMs).

You can install from 64 MB to 512 MB of memory in the motherboard DIMM sockets. The board has DIMM sockets arranged as banks 0, 1, and 2. The motherboard supports the following memory features:

- 168-pin DIMMs with gold-plated contacts

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- 66 or 100 Mhz SDRAM
- Non-ECC (64-bit) and ECC (72-bit) memory
- 3.3 V memory only
- Single- or double-sided DIMMs in the following sizes:

DIMM Size	Non-ECC Configuration	ECC Configuration
16 MB	2 Mbit x 64	2 Mbit x 72
32 MB	4 Mbit x 64	4 Mbit x 72
64 MB	8 Mbit x 64	8 Mbit x 72
128 MB	16 Mbit x 64	16 Mbit x 72

When adding memory, follow these guidelines:

- You can install DIMMs in any of the three banks
- You can use different sizes of DIMMs in different banks
- The BIOS detects the size and type if installed memory
- For ECC operation to be available, all installed memory must be ECC, and you must enable the ECC Configuration feature in the Setup program. See the SE440BX Motherboard Product Guide for more information.

Guidelines for Adding and Removing Memory

When adding memory to the 6180 Computer processor board, follow these guidelines:

- SDRAM DIMMs can be installed in one, two, or three sockets in any order. The BIOS automatically detects memory type (i.e. ECC, non-ECC), size, and speed.
- EDO DIMMs are not supported in the P3 motherboard. Do not attempt to install these types of DIMMs.
- Use only gold-plated DIMMs in your Pentium III motherboard
- Use 168-pin (100 MHz), unbuffered SDRAM DIMMs. Both single- and double-sided DIMMS, and registered DIMMs are supported.
- Use of serial-presence detect (SPD) DIMMs is optional, but recommended.

Adding and Removing Memory Modules

This section gives instructions on how to add memory modules to or remove memory modules from the 6180 Computer processor board.

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Internal 6180 Computer components may be damaged by Electrostatic Discharge (ESD). Make sure you wear a grounding strap whenever handling circuit boards, memory modules or other internal components.

ATTENTION: Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the 6180 Computer and components.

Also observe the following precautions:

- Always handle the memory cards by the ends not by the memory module contacts.
- Store memory in an anti–static bag when it is not installed.
- Never install or remove memory with the power turned on.

To add or remove memory:

1. Disconnect power from the 6180 Computer.

ATTENTION: Disconnect all power from the 6180 Computer before adding and removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer.

2. Remove the back panel of the 6180 Computer.

   See the “Removing the Back Panel and Accessory Drive Cover” section (on page 4-2 for details on how to remove the back panel.

3. Remove the 5 screws securing the power supply (see illustration, next page).

Note: You do not have to disconnect the power supply wiring. Carefully position the power supply out of the way.

Carefully remove the power supply while noting how the cabling is dressed in the unit. Also note that air diverting flap(s) are attached to the power supply. Observe the position of the air diverting flap(s) for later re–installation. Be careful not to damage them. Because of the limited length of the main supply cable harness to the motherboard, the power supply can be moved only to the point that it just clears the edge of the chassis.

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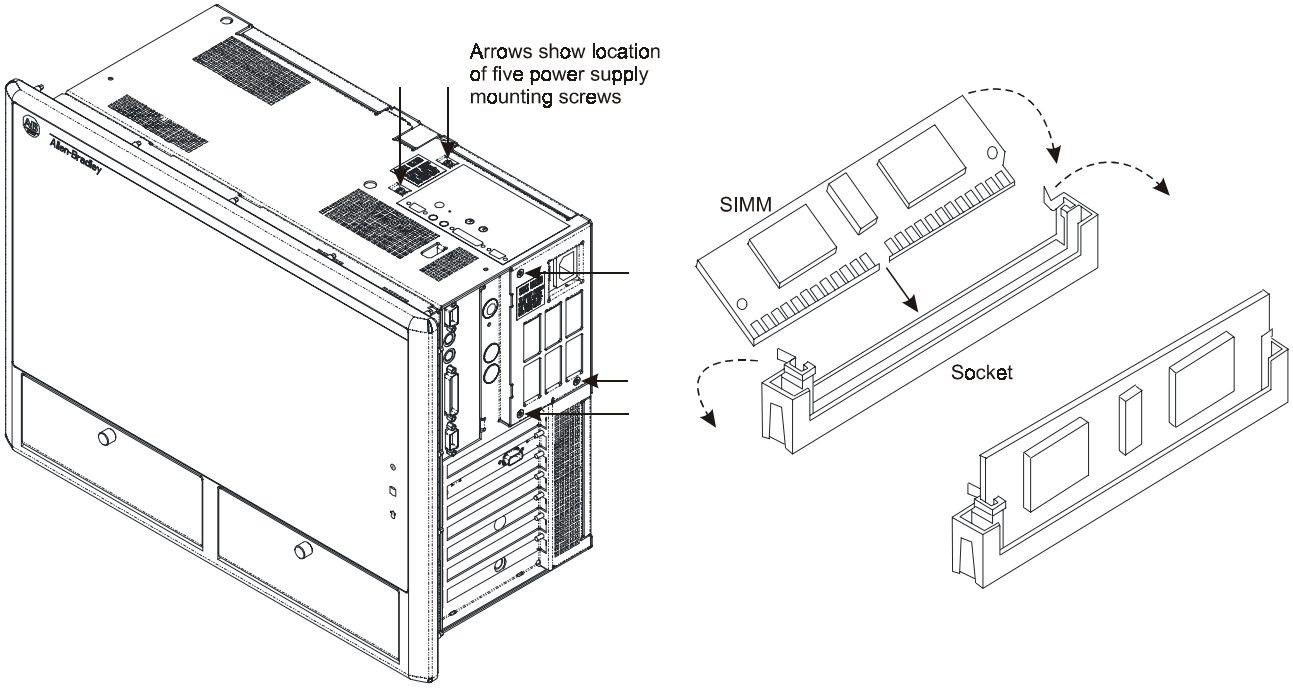
4. Holding the DIMM only by the edges, remove it from its anti–static package.

Figure 5- 2



5. Make sure the clips at either end of the socket are pushed away from the socket.

6. Position the DIMM above the socket. Align the two small notches in the bottom edge of the DIMM with the keys in the socket.

7. Insert the bottom edge of the DIMM into the socket (see the figure above).

8. When the DIMM is seated, push down on the top edge of the DIMM until the retaining clips snap into place. Make sure the clips are firmly in place.

9. If you installed a DIMM with ECC memory, turn on the computer and use the ECC Configuration feature in Setup to enable ECC (see the associated motherboard guide).

10. After the DIMMs are installed, return the power supply to its mounting position in the chassis. Dress the cables to their original position and ensure that the air diverting flap (s) are installed near the processor heat sink, as originally positioned.

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11. Secure the power supply and install back panel.

12. Replace the back panel. See page 4-2.

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Adding and Removing Processors

Chapter Objective

This chapter describes how to remove and install processors.

Installing and Removing Processors

The 6180 Pentium III processor board has a 370 socket that supports a processor upgrade migration path that includes higher performance Pentium III processors. The 6180 Computer Pentium processor board has a type 7 socket which supports the Pentium process.

The types of processors supported are:

- Pentium Classic-166Mhz and 233Mhz
- Slot 1-PII and PIII
- Phase 2 (or 4) PS/Finned H. S.
- Phase 3 P. S.
- Phase 4 P. S. with Puma H. S.

ATTENTION: Disconnect all power from the 6180 Computer before removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer.

ATTENTION: Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the 6180 Computer and components.

To remove the processor:

1. Disconnect the power from the 6180 Computer.
2. Remove the back panel. (See page 4-2).

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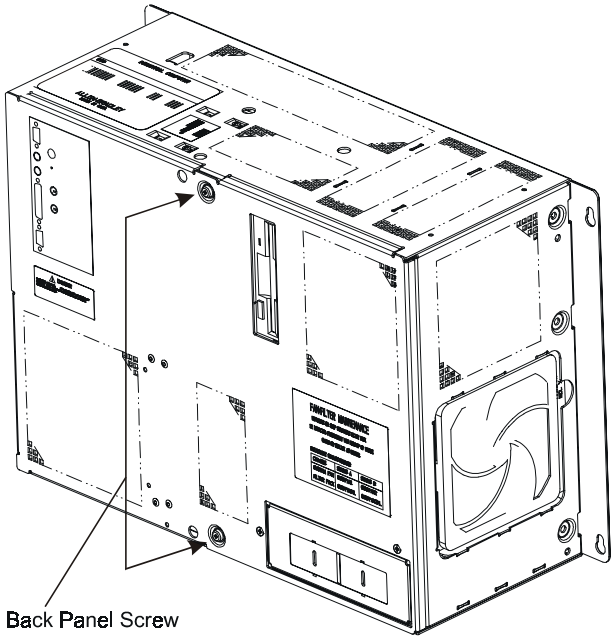
Figure 6- 1



3. Remove the five screws securing the power supply.

Note: You do not have to disconnect the power supply wiring. Carefully move the cables, and position the power supply out of the way.

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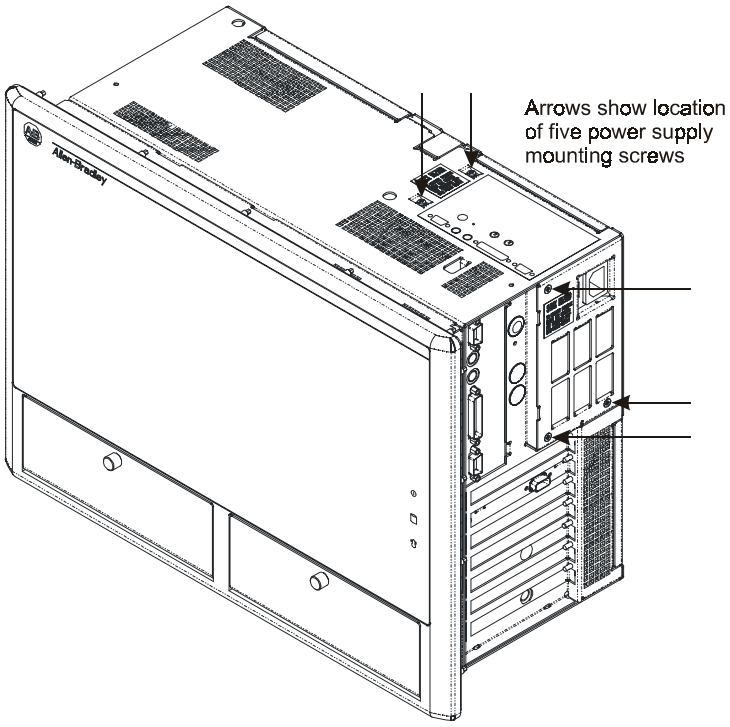
Figure 6- 2



4. Refer to the following figures (the 6180 Computer has two types of processors). While holding the heat sink, use pliers to carefully pull the spring clamp from the tab on the socket.

ATTENTION: The spring clip fits tightly on the socket base. Use extreme caution when using a needle nose pliers to remove the spring clip. Make sure pliers do not slip and damage the processor board.

ATTENTION: The spring clamp secures the heat sink to the processor. When the clamp is removed, the heat sink will slide off. Make sure the heat sink does not fall onto other components.

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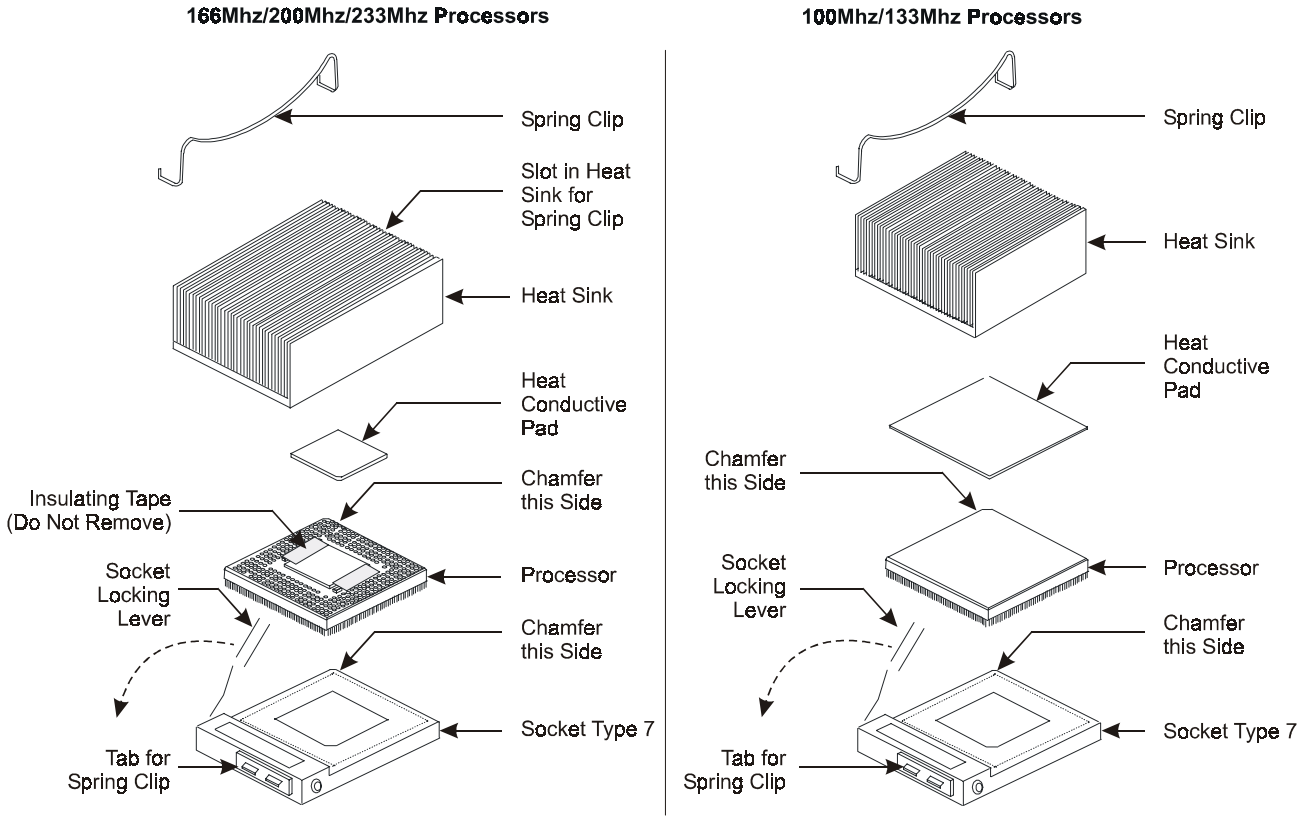
Figure 6- 3



5. Remove the spring clamp, heat sink, and conductive pad.

ATTENTION: When the socket lever is raised, the processor is loose in the socket. Make sure the processor does not drop out of the socket.

ATTENTION: Do not remove any heat conductive grease from the conductive pad. Be careful not to damage the conductive pad. Damage to the pad or removal of conductive grease may result in overheating and failure of the processor.

6. Press lightly down and out on the lever of the processor socket until the lever can be pulled up.

7. Note the orientation of the processor and remove the processor from the socket. Do not touch or bend the pins.

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8. Place the processor in conductive foam and store in an anti–static package.

To install the processor:

ATTENTION: Do not force the processor into the socket. The processor will only fit in the socket one way. Refer to the figure on the previous page for proper orientation. Notice that both the socket and processor have a flat corner (chamfer) that must be aligned

1. Make sure the socket locking lever is up. Position the processor in the socket. Make sure the processor is oriented the same way as when removed. The processor pins will not completely align with the socket if the processor is not oriented correctly. The processor fits easily into the socket; do not press on the processor or bend any pins.

2. Lightly hold the processor in the socket and push down on the socket lever until it locks in place.

3. Carefully remove the protective plastic liner on the pad.

4. Position the heat conductive pad and heat sink on the processor. The heat sink and pad should be approximately centered over the processor. Make sure you do not wrinkle or remove conductive grease from thermal pad.

Note: If the pad is damaged, it cannot be used. Either replace the pad or use a layer of thermal grease as a substitute.

5. Place the spring clip over the heat sink. Position one end of the spring clip under the socket tab. Use a needle nose pliers to position the other end of spring clip under the tab on other side. On versions with an extended heat sink, insert the spring clip into the slot on the heat sink first and then into the slot on the opposite side (see illustration previous page). Be careful not to let the pliers slip.

6. Secure the power supply with the same screws removed.

ATTENTION: Risk of Electrical Shock. Do not use power supply mounting screws exceeding 0.438 inches (11.125 mm). Screws that are longer than recommended may come in contact with voltage sources within the power supply.

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7. Refer to the Processor Board User Manual to check system jumper settings.

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Adding and Removing Removable Media

Chapter Objective

This chapter describes how to remove and install removable media.

Installing and Removing Removable Media

Mounting Options

The following shows the three methods of mounting a floppy drive. The front mounting option is not available for the non–display, metal bezel, 12-inch, and 15-inch versions of the 6180 Computer.

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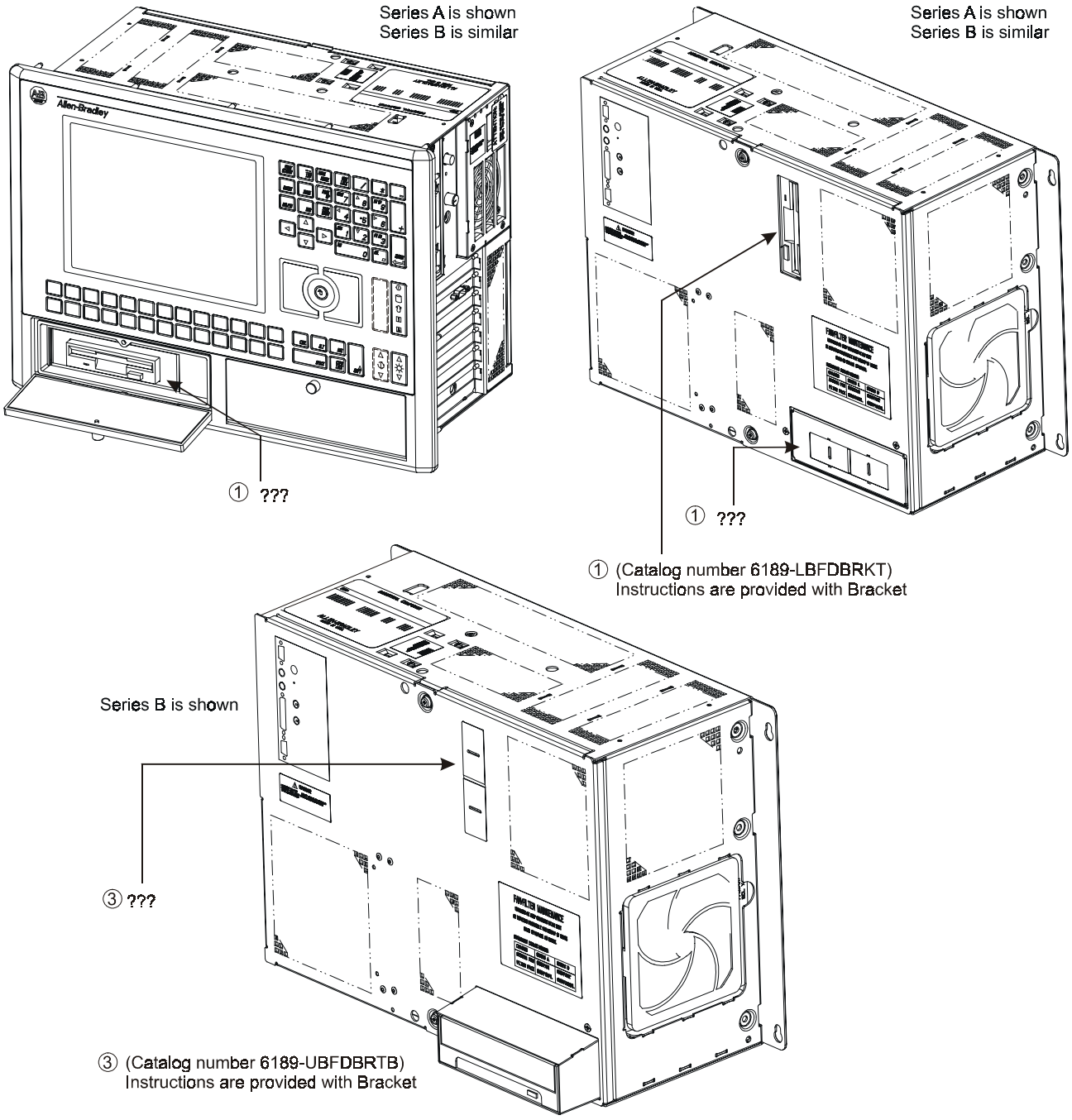
Figure 7- 1



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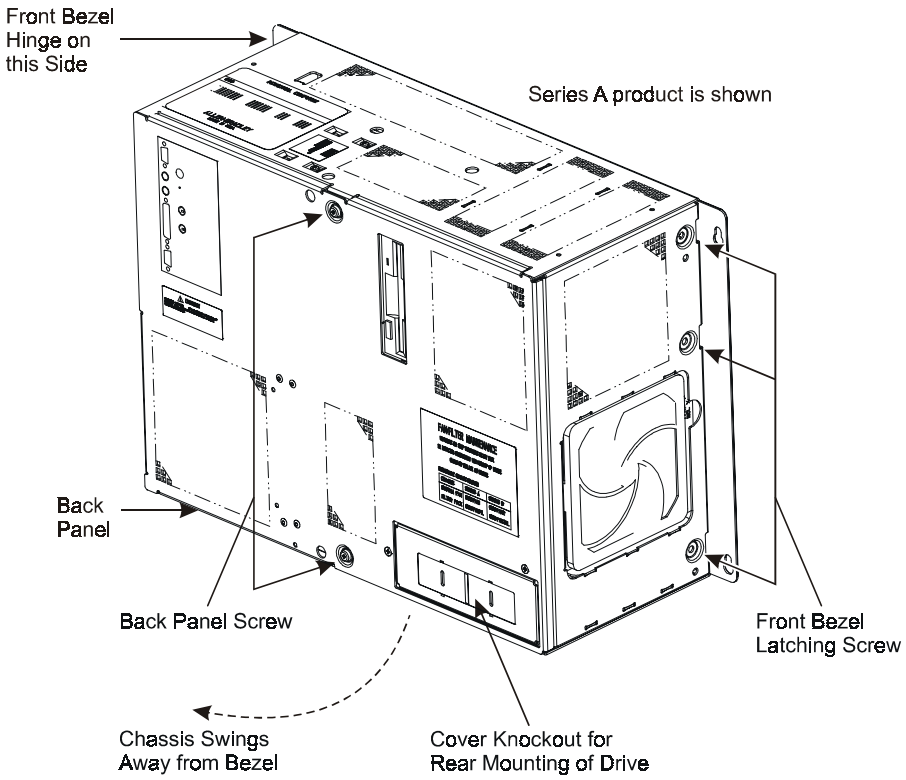
To remove the floppy drive or CD-ROM drive:

1. Disconnect power from the 6180 Computer.

ATTENTION: Disconnect all power before adding and removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer.

2. Remove the back panel. See page 4-2.

Figure 7- 2



ATTENTION: If the 6180 Computer is installed with mounting clips, the mounting clips on the hinge side will interfere with the opening of the hinge. Remove the mounting clips on the hinge side before swinging chassis away from the bezel. Failure to remove clips may damage clips and the chassis.

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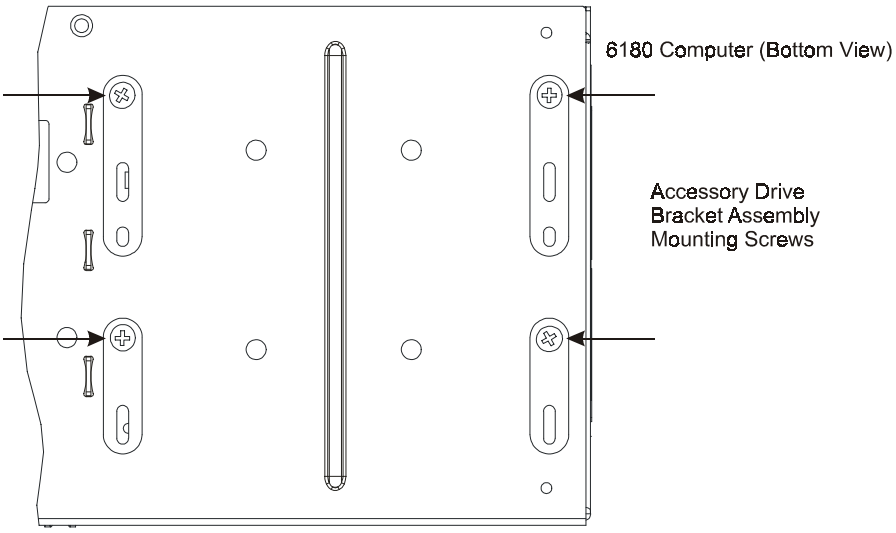
3. From the bottom of the chassis (under the accessory drive), remove the 4 screws that secure the accessory drive/ bracket assembly.

Figure 7- 3



4. The sequence of the following steps depends on whether the floppy drive or CD-ROM drive is mounted to the rear or front:

   - If mounted for front access, do step 6 then step 7.
   - If mounted for rear access, do step 7 then step 6.

5. Disconnect the ribbon cable connector and power cable connector from the accessory drive.

Figure 7- 4

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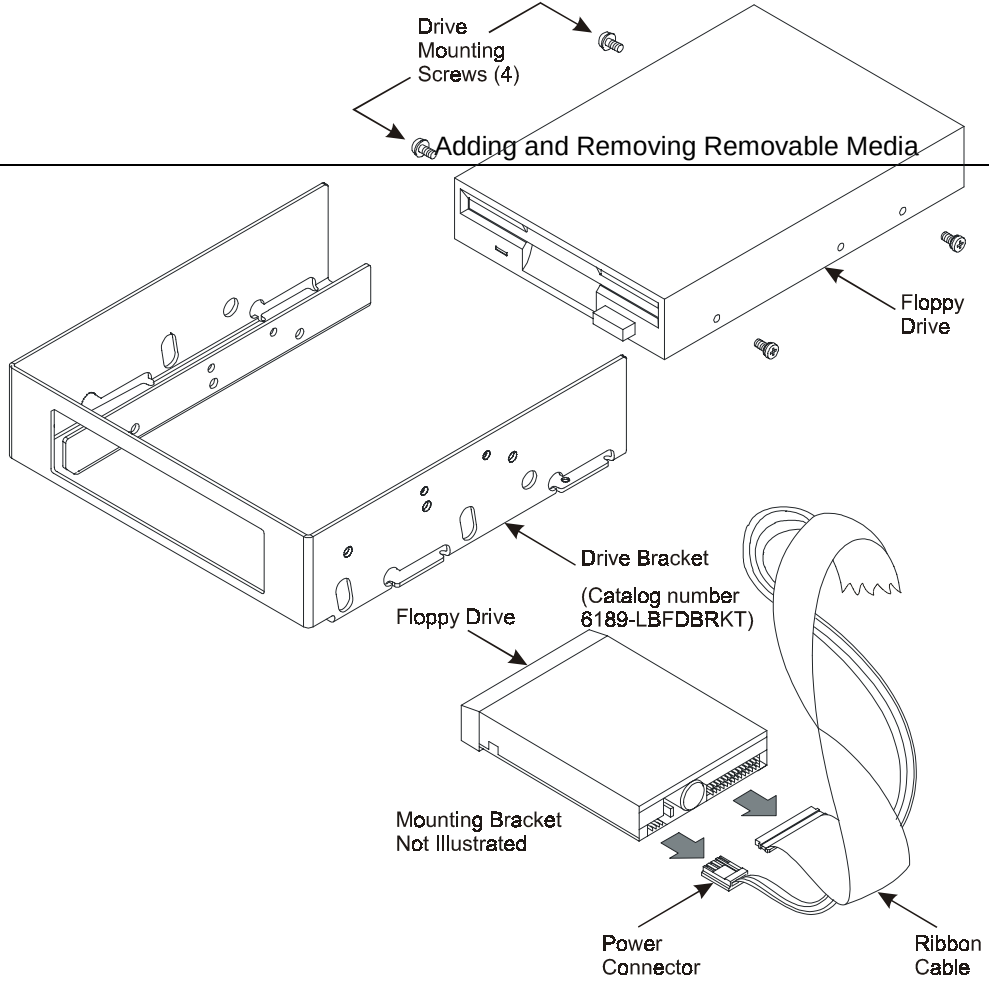

6. Remove the accessory drive / bracket assembly through the back of the chassis.

7. Remove the screws that secure the accessory drive to the bracket. This will vary depending upon the type of drive.

Installation

Note: You can also use these procedures to install a front or rear facing CD-ROM drive (without using the mounting bracket). The lower bay floppy drive mounting bracket and CD-ROM drive use the same sets of chassis mounting holes.

To install a floppy using the lower bay mounting bracket:

1. Secure the floppy drive to the drive bracket using four screws supplied with the bracket. Tighten screws to a torque of 6–8 in. lbs (.7–.9 N•m).

2. Swing open the back of the computer chassis after removing the three bezel latching screws.

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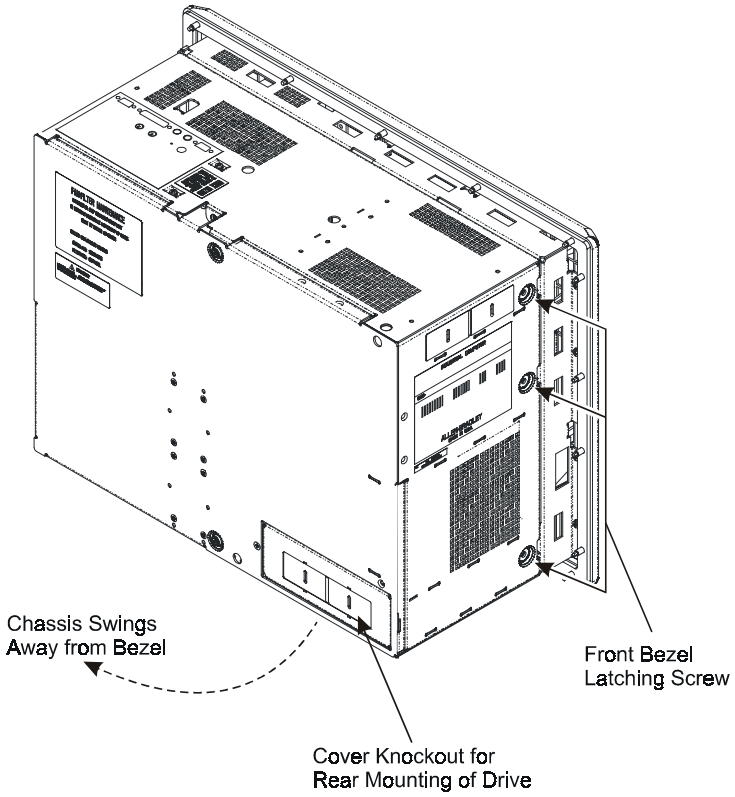
Figure 7- 5



3. Position the accessory drive / bracket assembly into the chassis.

Note: **For rear facing drives,** you may have to remove the panel knockout (shown above) if a rear mounted drive was not previously installed. Insert screwdriver into slot on knockouts and pry back and forth on knockout to remove. Use pliers to remove the center rib between the two knockouts.

For front facing drives, if a floppy drive was not previously installed, you may have to replace the floppy drive cover behind the front access door with a cover having an opening.

Note: You may have to remove the side panel knockout (shown below) if a side mounted drive was not previously installed. Insert screwdriver into slot on knockouts and pry back and forth on knockout to remove. Use pliers to remove the center rib between the two knockouts.

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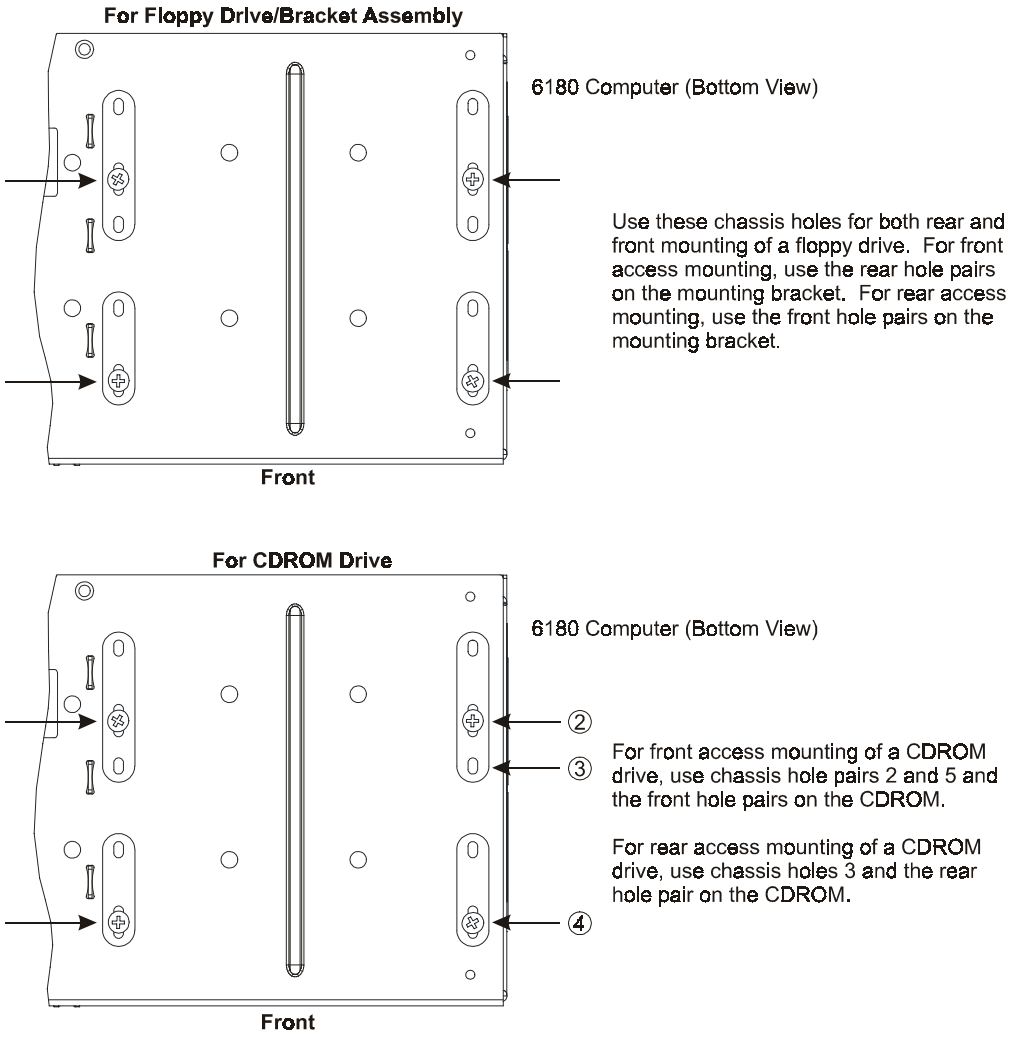
4. Connect the cable connectors to the floppy drive. Connectors are keyed so they cannot be installed backwards.

5. Align the floppy drive/bracket (or CD-ROM) and chassis mounting holes and secure them with the 4 mounting screws provided with the bracket (or CD-ROM). Tighten screws to a torque of 6–8 in. lbs (.7–.9 N•m).

Figure 7- 6


For Floppy Drive/Bracket Assembly
6180 Computer (Bottom View)
Use these chassis holes for both rear and front mounting of a floppy drive. For front access mounting, use the rear hole pairs on the mounting bracket. For rear access mounting, use the front hole pairs on the mounting bracket.
Front
For CDROM Drive
6180 Computer (Bottom View)
②
③
For front access mounting of a CDROM drive, use chassis hole pairs 2 and 5 and the front hole pairs on the CDROM.
For rear access mounting of a CDROM drive, use chassis holes 3 and the rear hole pair on the CDROM.
④
Front

6. Swing the chassis back onto the bezel and secure chassis with the three latching screws. Tighten screws to a torque of 18–22 inch lbs (2–2.5 N•m).

7. Install the back panel. See page 4-2.

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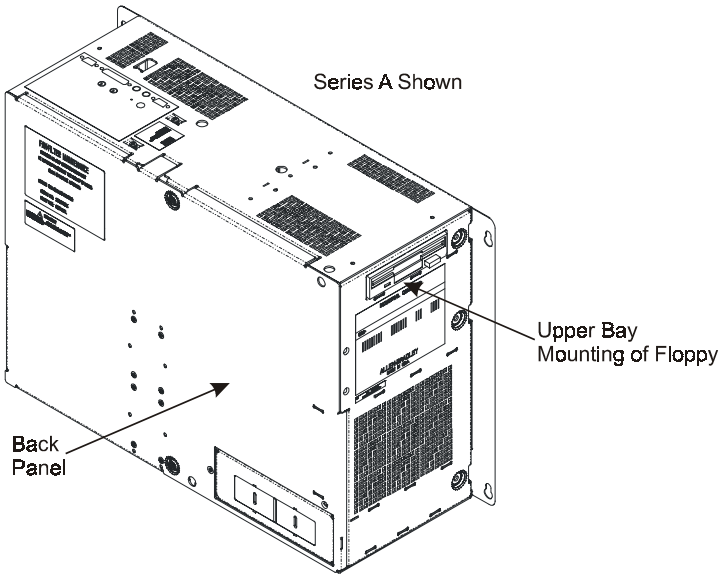
8. Apply power to the 6180 Computer and verify operation of the drive. You may need to edit BIOS settings to recognize the drive or to allow the operating system to detect the new hardware.

Floppy Drive Upper Bay Mounting Bracket

The upper bay mounting bracket allows you to mount a floppy drive out the side of the 6180 Computer chassis.

Mounting Bracket for Upper Bay Floppy Drive
(Catalog No. 6189–UBFDBRKT for Series A; Catalog No. 6189-UBFDBRKTB for Series B)

Figure 7- 7



Installation

To install a floppy using the upper bay mounting bracket:

1. Secure the floppy drive to the drive bracket using four screws supplied with the drive. Tighten screws to a torque of 6–8 in. lbs (.7–.9 N•m).

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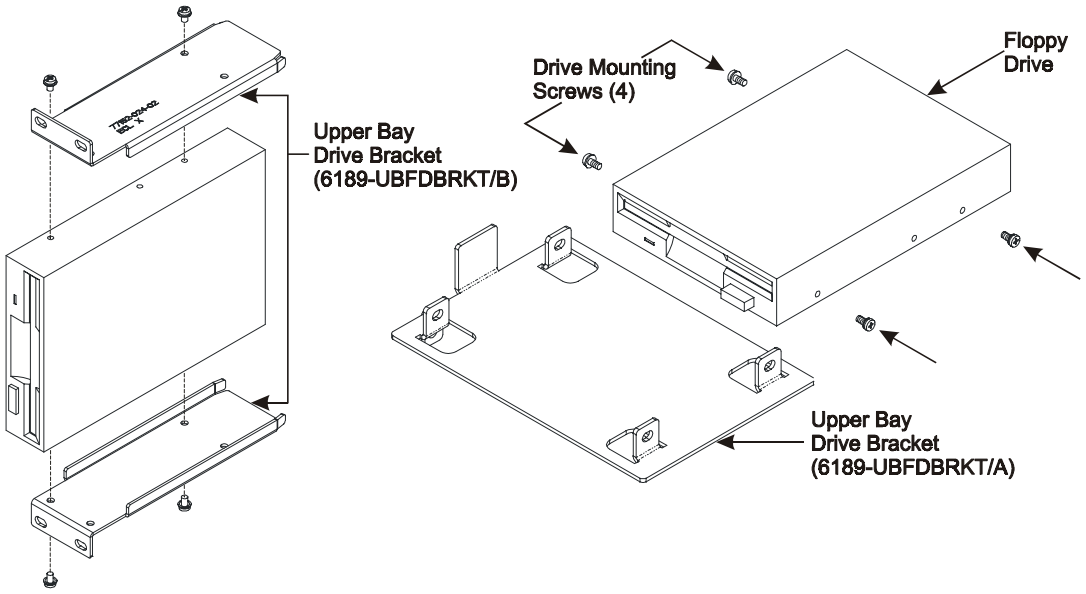
Figure 7- 8



2. Remove the back panel to the 6180 Computer. See page 4-2.

3. A shorter drive cable is provided with the mounting kit for mounting in the upper bay. Connect the cable to the floppy drive connector on the processor board (refer to the Processor Board user manual if necessary) and the connector on the back of the drive.

4. Position the accessory drive / bracket assembly into the chassis. The edge of the bracket fits under the tab at the front of the chassis.

Note: You may have to remove the side panel knockout (shown below) if a side mounted drive was not previously installed. Insert screwdriver into slot on knockouts and pry back and forth on knockout to remove. Use a pliers to remove the center rib between the two knockouts.

ATTENTION: If knockout is removed, carefully remove any burrs or sharp edges. Failure to remove sharp edges could result in personal injury.

5. Align the bracket and chassis mounting hole and secure the drive / bracket assembly with a mounting screw. Tighten screw to a torque of 6–8 in. lbs (.7–.9 N•m).

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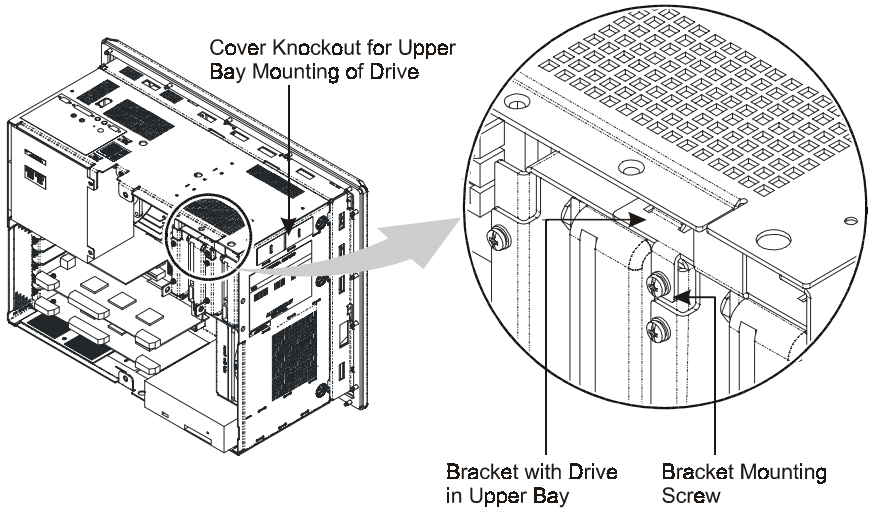
Figure 7- 9



6. Install the back panel.

7. Apply power to the 6180 Computer and verify operation of the drive. You may need to edit BIOS settings to recognize the drive or to allow the operating system to detect the new hardware.

Master/Slave Jumper Settings

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Adding and Removing Data Storage Drives

Chapter Objective

This chapter describes how to remove and install data storage devices.

Installing and Removing Data Storage Drives

The section gives instructions on how to install or remove a hard disk drive from the 6180 Industrial Computer.

Internal components may be damaged by electrostatic discharge (ESD). Make sure you wear a grounding strap whenever handling circuit boards, memory modules or other internal components.

ATTENTION: Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the 6180 Computer and components.

ATTENTION: Be careful when setting a drive down on hard surfaces, to avoid damage due to shock or vibration.

Observe the following precautions:

- Always handle the drive by its metal frame.
- Avoid touching the exposed printed circuit board and components.
- Store a drive in an anti–static bag when it is not installed.
- Avoid touching the cable connectors.
- Never disconnect or connect a drive with power turned on.

To remove a hard drive:

1. Disconnect power from the 6180 Computer.

ATTENTION: Disconnect all power from the 6180 Computer before adding and removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer

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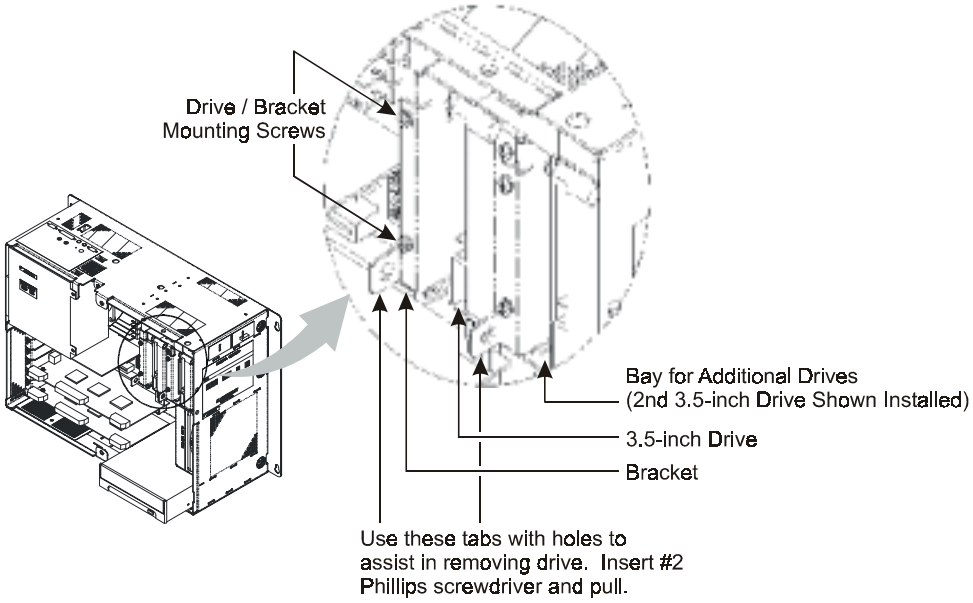
2. Remove the back panel of the 6180 Computer. See page 4-2.

Figure 8- 1



3. Disconnect the ribbon cable connector from the drive. On 3.5 inch drives, also disconnect the power connector from the drive.

4. Remove the two screws securing the drive / bracket assembly.

5. Remove the drive / bracket assembly.

For 3.5 Inch Hard Disk Drives

1. Remove the four drive mounting screws and the drive.

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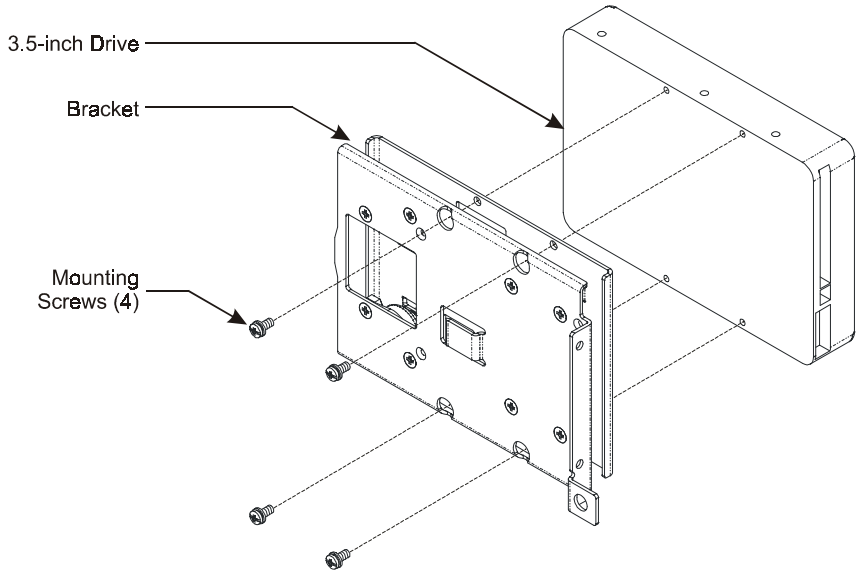
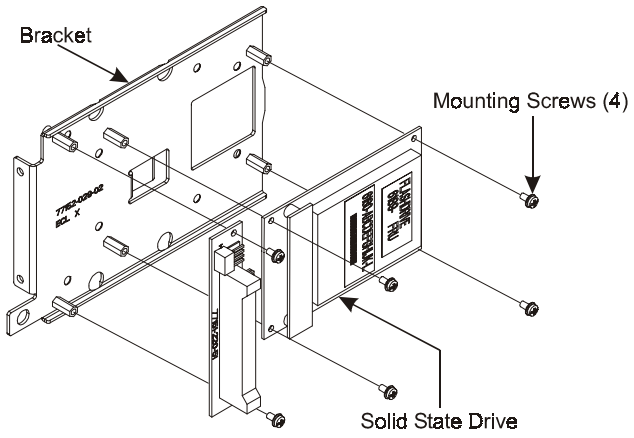
Figure 8- 2



For 2.5 Inch Solid State Flash Drives

1. Remove the four drive mounting screws and the drive.

Figure 8- 3



To install a hard drive:

1. Secure the drive to the bracket with the four mounting screws. Tighten screws to a torque of 6–8 in–lbs.

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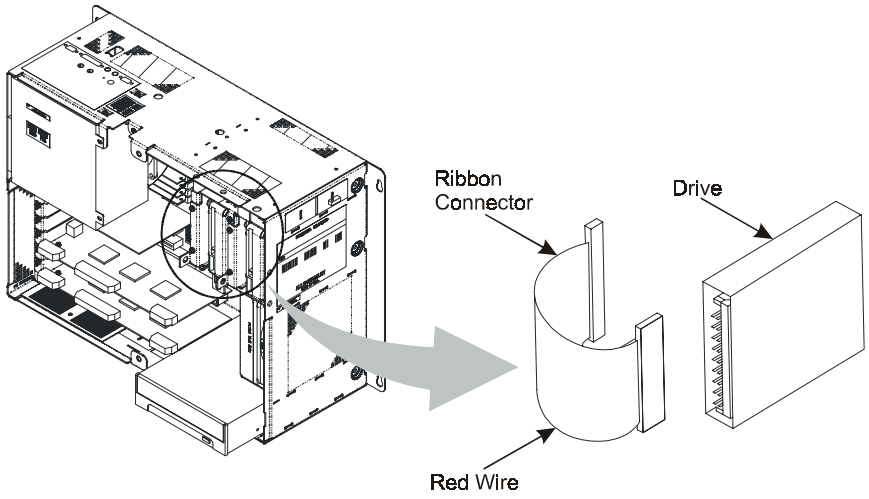
2. Position the drive / bracket assembly into the chassis. Make sure the tabs on the side of the bracket slide into the corresponding side hole in the chassis. Also make sure that the key on the end of the bracket is inserted into the slot on the chassis front panel.

3. Secure the drive / bracket assembly to the chassis with the two mounting screws. Tighten screws to a torque of 6–8 in–lbs.

4. Install the ribbon connector on the hard drive. On 3.5 inch drives also connect the power cable. Make sure that the ribbon cable is installed correctly. The red wire of the cable must be at the bottom as shown below. Connect the other side of the IDE ribbon cable to the motherboard.

Figure 8- 4



5. Install the back panel.

6. Apply power and verify the operation of the drive. Refer to any additional instructions provided with the drive.

Master and Slave Jumper Settings

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Adding and Removing Power Supplies

Chapter Objective

This chapter describes how to remove and install power supplies.

Installing and Removing Power Supplies

The AC input power supply accepts a 120/240V AC input power. The DC input power supply accepts a 24V DC input power. Each provides regulated lower DC voltages required for all internal components such as processor board, card connectors, peripherals, and chassis fan.

The 160W and 210W power supplies are used with Pentium class processors, while the 180W power supply is used with the Pentium III processors. The 200W DC power supply works with all of the above.

ATTENTION: Review safety precautions before proceeding. Failure to follow proper safety procedures could result in severe electrical shock or damage to the 6180 Computer.

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To remove the power supply:

1. Disconnect power from the 6180 Computer.
2. Remove the back panel. See page 4-2.
3. Unplug the power cord from the power supply.
4. Remove the power supply filter.
5. Follow the wires as they exit the power supply and disconnect the wiring at the connectors. Pull on the connector to remove, do not pull on the wires. Make sure you note the location of the connectors. Connectors P1 and P10 have latches that must be squeezed before the connector can be removed.
6. While supporting the power supply, remove the 5 mounting screws that secure the power supply.
7. Remove the power supply.

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Figure 9- 1

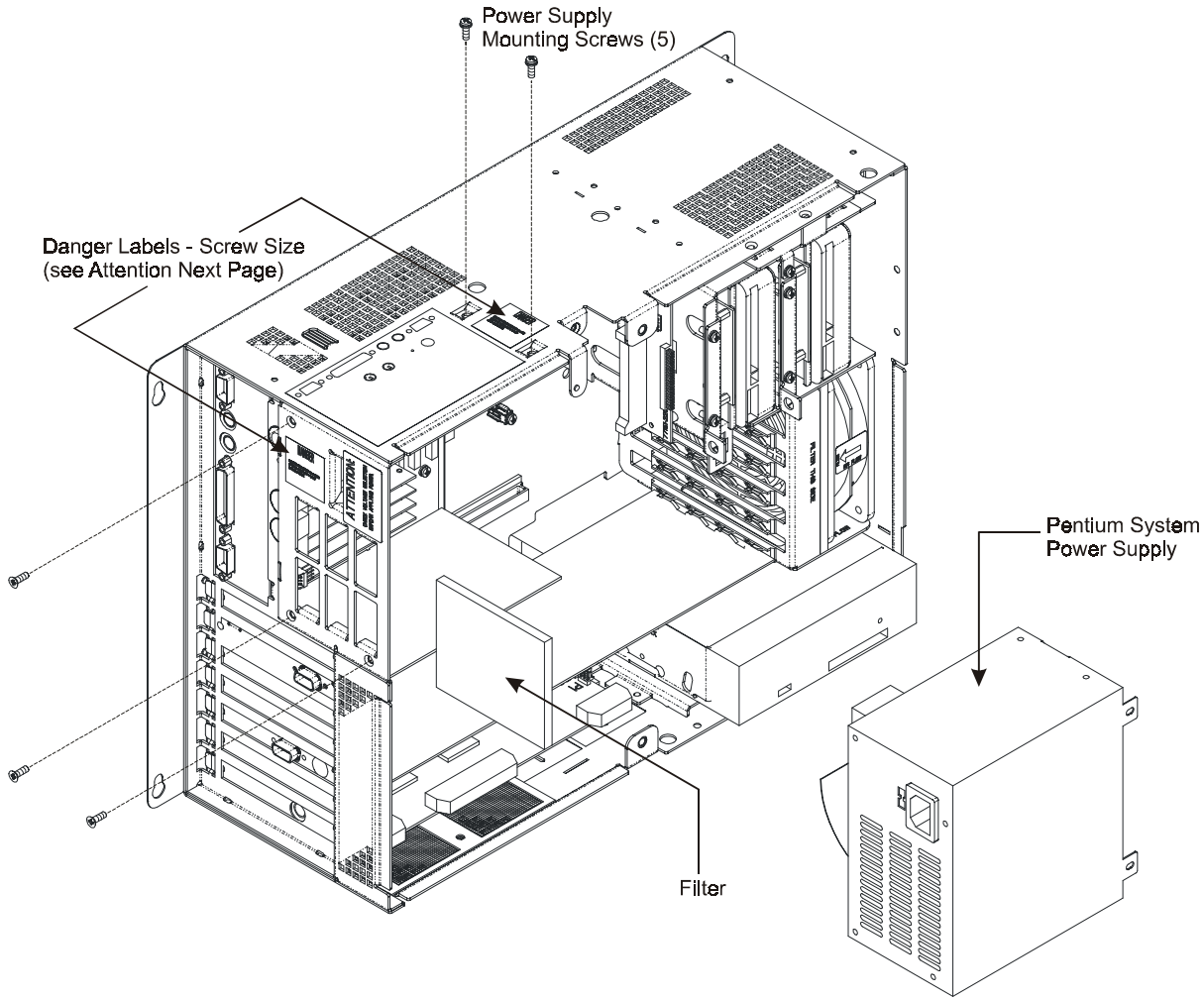

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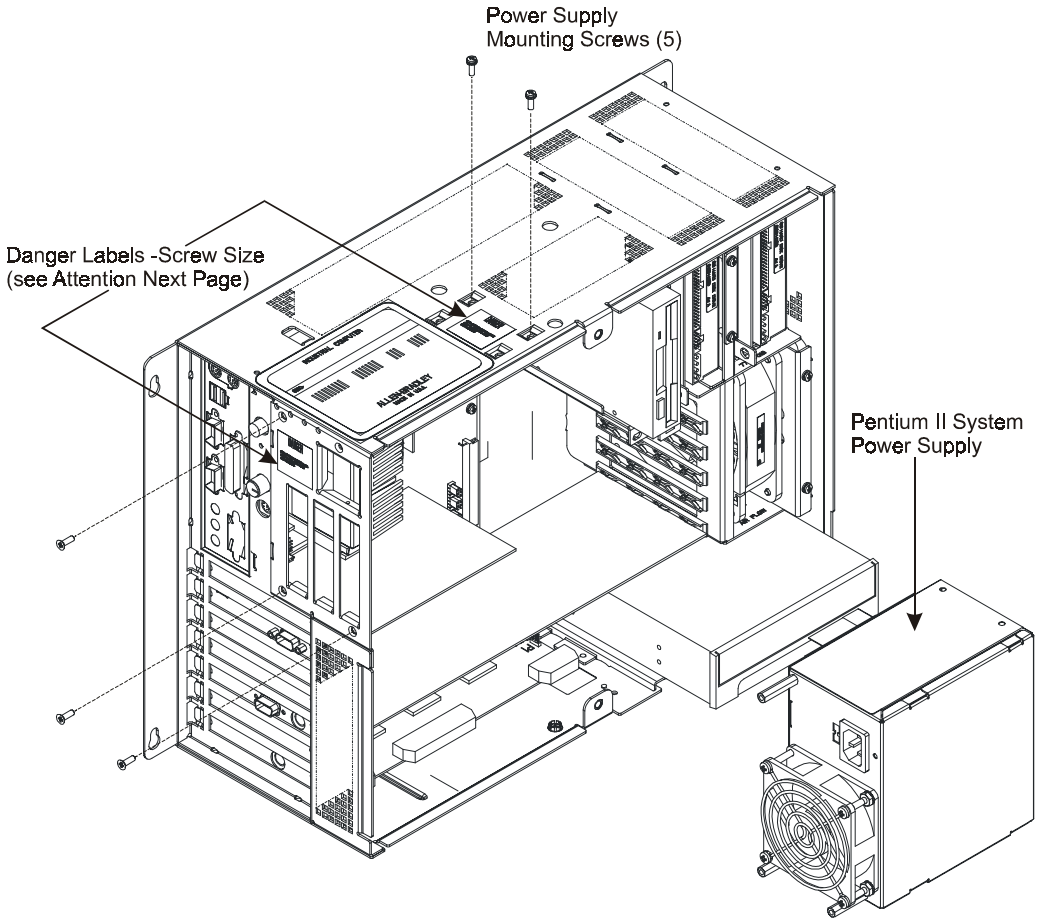
Figure 9- 2



To install the power supply:

ATTENTION: Risk of Electrical Shock. Do not use screws exceeding 0.438 inches (11.125 mm). Screws that are longer than recommended may come in contact with voltage sources within the power supply.

1. Position the power supply in the chassis and secure with the 5 mounting screws. Torque screws to 6–8 in–lbs (0.7 to 0.9 N•m).

2. Connect the power supply cable connectors to the processor board and other internal components. The connectors are keyed so they cannot be installed the wrong way, do not force connectors.

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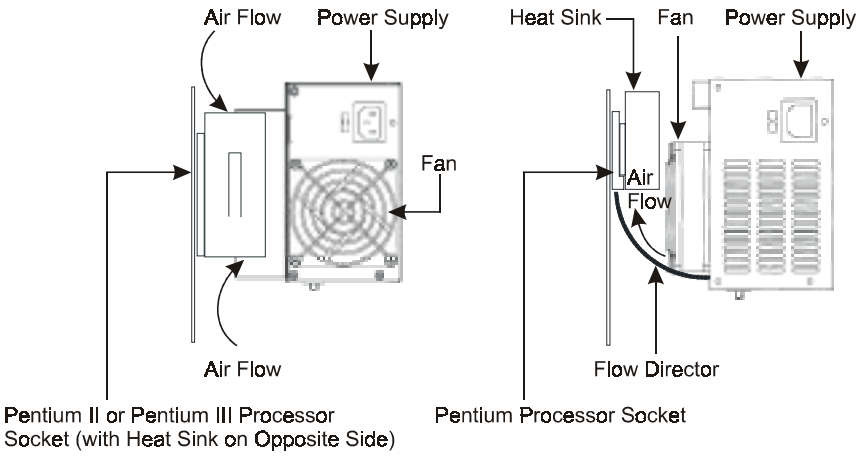
ATTENTION: Make sure the flow director is properly positioned between the power supply and base of the processor socket. Failure to correctly install the flow director may result in excessive temperatures which can damage the processor.

3. Make sure the flow director is positioned correctly.

   - On Pentium systems, the flow director is directed at the base of the processor socket. The flow director tabs are inserted into the power supply below the fan. The free end of the flow director is positioned against the base of the processor socket.

   - On Pentium II and Pentium III systems, the flow director is attached to the power supply. The flow director surrounds the slot 1 processor module and draws air away.

Figure 9- 3



4. Install the power supply filter, if applicable (Pentium II and DC powered systems do not require power supply filters).

5. Install the back panel.

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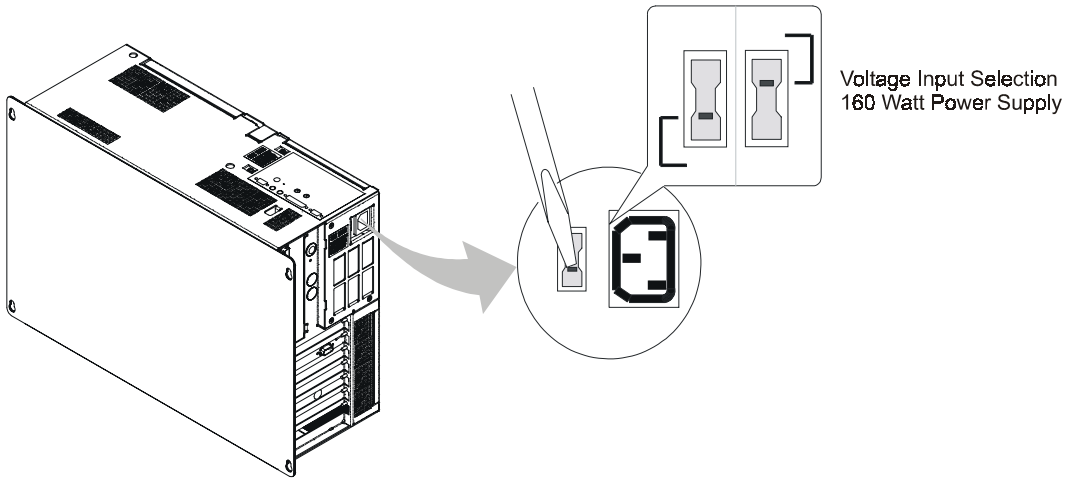
160 Watt Supply - Check AC Voltage Selection Switch:

Note: Voltage selection on the 210 and 180 Watt supply is automatic. The following instructions only apply to the 160 Watt supply.

If a power cord is being connected for the first time, a protective warning label covers the power supply connector. This warning label reminds you to set the proper input voltage and must be removed before the power cord is inserted.

ATTENTION: Check voltage selection before applying power (160 Watt supply only).

Figure 9- 4



200W 24V DC Input Power Supply Connection

Proper Earth grounding of the product chassis is **required** when using the 200W DC input power supply. Keep the grounding wire short, and preferably use braided cable, in order to reduce the impedance of this connection as much as possible. Improper grounding will result in reduced immunity to line transients and surges on the DC input power lines.

It is recommended that the 24V DC power be supplied via **10 or 12 gauge wiring** kept as short as possible, preferably less than 3 meters in length.

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Adding and Removing Displays and Backlights

Chapter Objective

This chapter describes how to remove and install displays and backlights.

Installing and Removing Displays and Backlights

The backlight uses Cold Cathode Fluorescent (CCF) tubes to illuminate the display.

ATTENTION: Disconnect all power from the 6180 Computer before replacing the backlight. Failure to disconnect power may result in electrical shock and/or damage to the terminal.

ATTENTION: Do not touch any of the exposed electronic components to prevent damage from electrostatic discharge (ESD).

Replacing the Display and No Display Bezel

The procedures for replacing the plastic bezel/displays are the same.

If you are installing a bezel with no display, the procedures are the same except for the number of electrical connectors to the bezel.

To remove a bezel/display :

1. Disconnect the power from the 6180 Computer.
2. Disconnect all communication and power cables.
3. Remove the clips or mounting stud nuts that secure the computer to the panel.

Important: There is metal tab that temporarily locks the bottom of the chassis in the panel during mounting. This tab must be bent in before bezel / chassis can be removed.

4. Remove the computer from the panel or enclosure.

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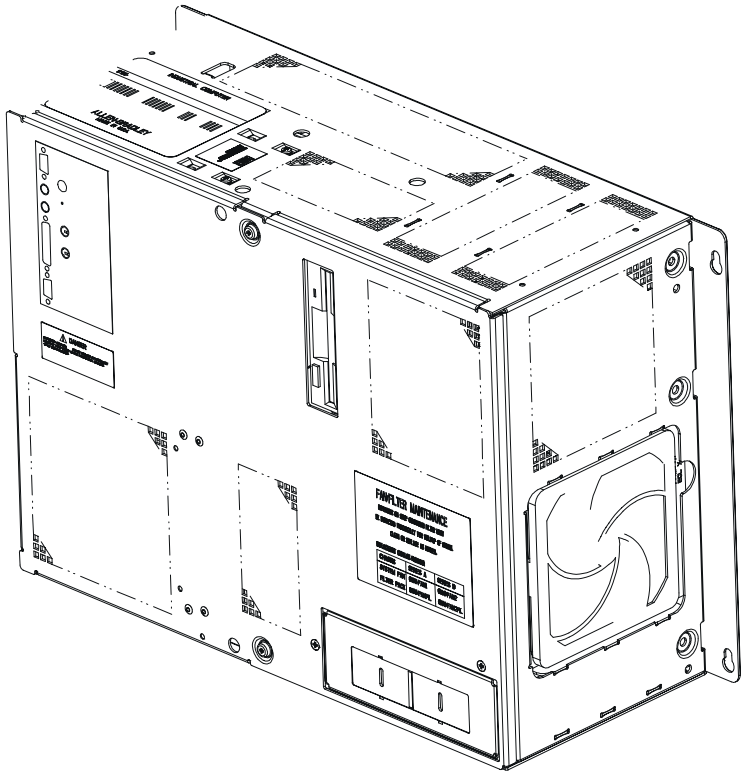
5. Remove the three latching screws that secure the chassis to the front bezel.

Figure 10- 1



6. Swinging the chassis open about 90 degrees.

7. Disconnect the electrical connectors from the front panel. Note the location and orientation of the connectors.

Figure 10- 2

INSERT GRAPHIC HERE

8. Drive the hinge pin up using a slotted screwdriver (under the head of the hinge pin) and a small hammer.

Figure 10- 3

INSERT GRAPHIC HERE

9. Remove the bezel/display from the chassis.

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To install a bezel display:

1. Secure the bezel/display to the chassis by aligning the hinges and installing the hinge pin.
2. Connect the electrical connectors between the bezel/display and the chassis. The connectors are different sizes and each is keyed so that they cannot be installed incorrectly. Do not force a connector.
3. Swing the chassis closed. Make sure the bezel/display cables and connectors move freely and do not crimp when the chassis is closed.
4. Secure the chassis with the three latching screws. Use the new screws provided.
5. Mount the 6180 Computer in the enclosure or panel.
6. Apply power and verify operation of the display.

Replacing the 10.4 inch Display Backlight

To replace the backlight (10.4 inch displays only):

7. Disconnect the power from the 6180 Computer.
8. Remove the three latching screws that secure the chassis to the front bezel.

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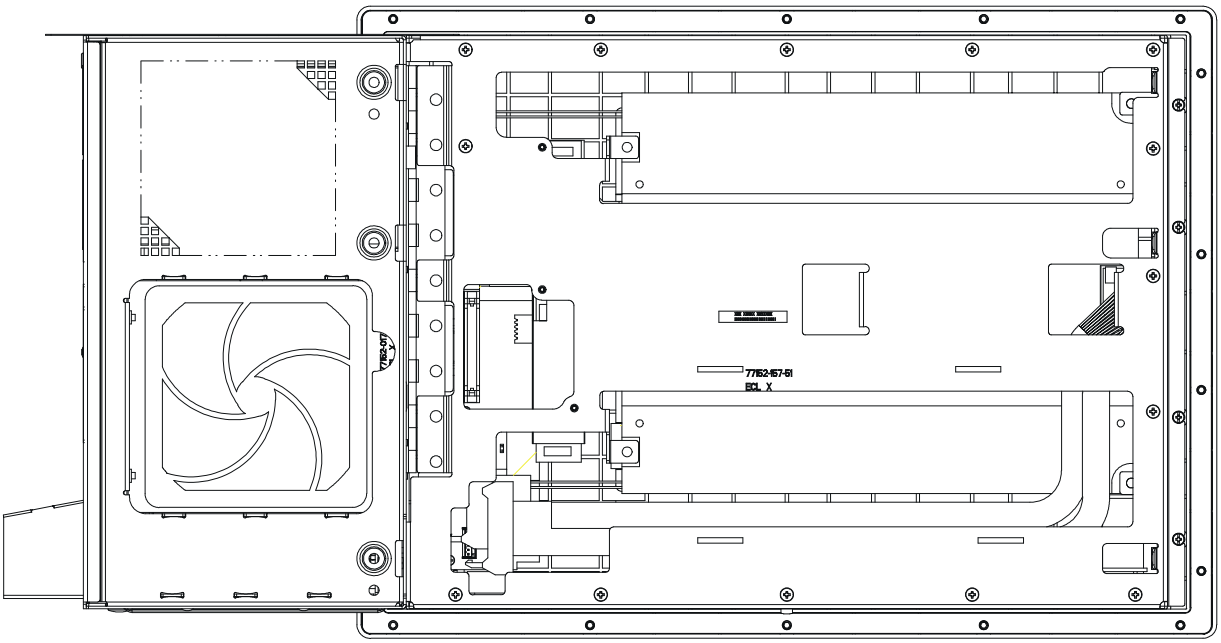
Figure 10- 4



9. Note the following precautions before swinging the chassis away from the bezel.

ATTENTION: Remove all external cables from the side panel connectors. Failure to remove cables may cause damage to the cables and connectors.

ATTENTION: If the 6180 Computer is installed with mounting clips, the mounting clips on the hinge side will interfere with the opening of the hinge. Remove the mounting clips on the hinge side before swinging chassis away from the bezel. Failure to remove clips may damage clips and the chassis.

10. Swing the chassis open about 90 degrees.

11. Remove four screws that secure backlight and remove the backlight to allow access to the power connector

12. Unplug the backlight power supply cable and remove the backlight.

13. Plug the backlight power supply cable into the new backlight.

14. Place the backlight on the four backlight standoffs.

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15. Replace the four backlight mounting screws and tighten to a torque of 6 to 8 inch-pounds (.7 to .9 N_m).
16. Swing the chassis back into position and tighten the three latching screws to a torque of 18 to 22 inch-pounds (2 to 2.5 N_m).
17. Reconnect and install any external cables or mounting clips.
18. Apply power and verify operation of the backlight.

Replacing the 12.1 inch Display Backlight

To replace the backlight (12.1 inch displays only):

1. Disconnect the power from the 6180 Computer.
2. Remove two screws each from the backlight assembly.
3. Disconnect the two cables from the power supply.
4. Remove the backlight assembly.

Replacing the 15 inch Display Backlight

To replace the backlight (15 inch displays only):):

1. Disconnect the power from the 6180 Computer.
2. Remove two screws each from the backlight assembly.
3. Disconnect the two cables from the power supply.
4. Remove the backlight assembly.

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Allen-Bradley Video Controller Boards

Chapter Objective

This chapter describes how to add or remove video controller boards.

Adding and Removing the Video Board

Internal components may be damaged by Electrostatic Discharge (ESD). Make sure you wear a grounding strap whenever handling circuit boards, memory modules or other internal components.

ATTENTION: Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the 6180 Computer and components.

Descriptions

The Allen-Bradley Video board is available in four versions. These versions provide 64-bit graphics processing and require a PCI slot (Pentium) or AGP slot (Pentium III). They are both available with 4Mbytes on board frame buffer memory.

Video Drivers

The video driver software is preloaded with the operating system on your computer. If you need to reinstall the driver, the driver software is provided on the video driver diskette (s) provided with your computer.

If you need to reload the video driver, follow the instructions for your operating system. These instructions will also describe how to change your display properties.

Features	Allen-Bradley Video Board Catalog No. 6189-FPABVC (SVGA only)
Interface	PCI local device
Video Memory	2MB EDO DRAM
Resolutions	1280 x 1024, 256 Colors (Interlaced)
	1024 x 768,65K Colors
	800 x 600, 16.7M Colors
	640 x480, 16.7M Colors
Graphics Processing	64 Bit
Power Requirements	5V DC±5% @ 1A
Dimensions inches/mm	6.4 m. (L) x 4.2 in. (H)163mm (L) x 107mm (H)

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Features	Allen-Bradley Video Board Catalog No. 6189-FPABVC (SVGA only)
Display Type	Flat Panel TFT SVGA

Features	Heading	Heading
Interface	PCI local device.	PCI local device.
Video Memory	4MB EDO DRAM	4MB EDO DRAM
Resolutions	1280 x 1024, 256 Colors (Interlaced) 1024 x 768,65K Colors 800 x 600, 16.7M Colors 640 x480, 16.7M Colors	1280 x 1024, 256 Colors (Interlaced) 1024 x 768,65K Colors 800 x 600, 16.7M Colors 640 x480, 16.7M Colors
Graphics Processing	64 Bit	64 Bit
Power Requirements	5V DC±5% @ 0.5A 3V DC±5% @ 0.25A	5V DC±5% @ 3V DC±5% @ 0.25A
Dimensions inches/mm	6.4 m. (L) x 4.2 in. (H) 163mm (L) x 107mm (H)	6.4 m. (L) x 4.2 in. (H) 163mm (L) x 107mm (H)
Display Type	Flat Panel TFT SVGA, XGA, and CRT	CRT

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Allen-Bradley Keypad Interface Cards

Chapter Objective

This chapter describes how to add or remove keypad interface cards.

Adding and Removing the Keypad Interface Card

Internal components may be damaged by Electrostatic Discharge (ESD). Make sure you wear a grounding strap whenever handling circuit boards, memory modules or other internal components.

ATTENTION: Wear a wrist strap (well grounded) and perform work in a static safe environment. Electrostatic discharge can damage the 6180 Computer and components.

Descriptions

The Allen-Bradley Keypad Interface card (KIC) is available in several versions, depending on the bezel configuration option. Only NDM Model 6180 does not require a KIC. The KIC is an ISA-based add-in card that handles keypad/keyboard control, touch screen control, touch mouse control, and LCD backlight brightness and on/off controls.

KIC Drivers and Utilities

Two software components may be preinstalled for the KIC, based on your system configuration: touch screen drivers and utilities, and the Keypad Configuration Utility (see Chapter 12).

The driver software is preloaded with the operating system on your computer. If you need to reinstall the driver, the driver software is provided on the driver diskette (s) provided with your computer.

If you need to reload the driver, follow the instructions for your operating system.

Cable Connectivity

Intro text. See Figure 12-x for the jumper settings.

To disconnect the cables:

5. Remove the back panel.

6. Remove the mounting screw on the bracket.

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7. Carefully remove the connector from the LCD and backlight cable to the backlight inverter board (P4).
8. Carefully remove the ground wire (P5).
9. Disconnect the connector from the front access port (P6).
10. Push away the latching connector.
11. Disconnect the (P8) connector to the bezel board.
12. Disconnect the (P7) connector (PS/2) to the side board.
13. Carefully remove the KIC card.
14. Insert the new KIC card, being careful not to pinch the cables.

Note: If using an ISA KIC card, be sure the card is inserted in the ISA slot farthest from the power supply.

15. Reconnect the (P7) connector to the side board.
16. Reconnect the (P8) connector to the bezel board.
17. Reconnect the connector from the front access port (P6).
18. Reconnect the ground wire (P5).
19. Reconnect the connector from the LCD and backlight cable to the backlight inverter board (P4).
20. Reconnect the mounting screw on the bracket.
21. Replace the back panel.

KIC Jumper Settings

The P1 jumper (see Figure 12-x), is used to “hardwire” the bezel keypad to be disabled. The P2 jumper is used to control write protection of the boot block segment of the KIC flash memory.

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Keypad Configuration Utility Software

Chapter Objective

This chapter describes how to setup and use the Keypad Configuration Utility (KCU) software.

Overview

The Keypad Configuration Utility (KCU) allows you to modify, view, print and download keypad configurations/firmware upgrades to the following 6180 Industrial Computers.

Catalog Number	Computer Type	Keypad
6180-xxCxxxxxxx	6180 Industrial Computer with 10.4 inch Color Screen	Standard 64 Key
6180-xxDxxxxxxx	6180 Industrial Computer with 10.4 inch Color, Touchscreen	Standard 64 Key
6180-xxLxxxxxxx	6180 Industrial Computer with 12.1 Inch Color Screen	Standard 69 Key
6180-xxMxxxxxxx	6180 Industrial Computer with 12.1 Inch Color, Touchscreen	Standard 69 Key
6180-xxGxxxxxxx	6180 Industrial Computer with 10.4 inch Color Screen	Full Alphanumeric 96 Key
6180-xxHxxxxxxx	6180 Industrial Computer with 15 Inch Color Screen	Standard 70 Key
6180-xxIxxxxxxx	6180 Industrial Computer with 15 inch Color Touchscreen	Standard 70 Key

For each keypad configuration you can:

- enable or disable specific keys
- retrieve, modify and save key codes associated with specific keys on the computer's faceplate.

If you modify the default codes and your computer is replaced in the future, you must either:

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- transfer the old KIC card to the new computer.
- modify the key codes in the KIC utility on the new computer to match the existing application. Save the key code definitions to a Keypad Configuration file (*.key) for later retrieval.

System Requirements

The Keypad Configuration Utility is a 32 bit Microsoft Windows application that runs on the 6180 computer in these environments:

- Windows 95/98/2000
- Windows NT, version 4.0 or later

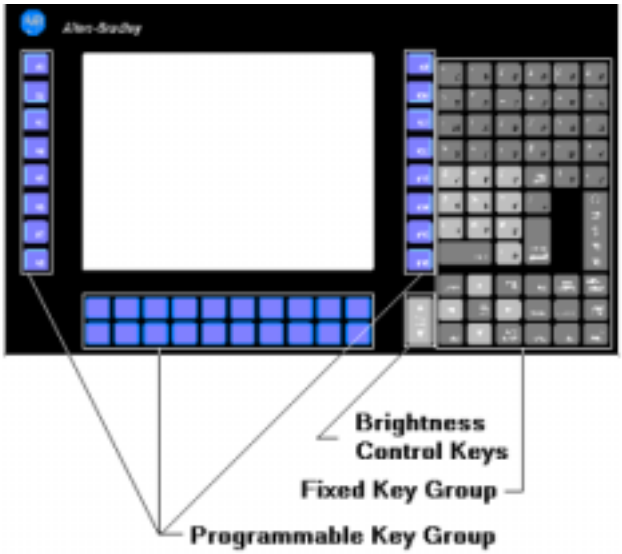
Keypad Configuration Utility – New Features

Several new keypad features were introduced in version A5.02 Alphanumeric KIC card firmware. Control of these new features is handled through a new release of the KCU, version 3.20.02 (or later).

These new features affect either or both the programmable and fixed key groups of keys, depending on the particular feature. Refer to Figure 1 for information on key partitioning.

Alphanumeric Keypad Layout

Figure 13- 1



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New Feature Description

The new supported keypad features are:

Single Programmable Key Mode with Abort

This feature works similar to a previously implemented feature that was referred to as "*Multi-Key Enable*" (now called *Standard Multi-Key Mode*). *Single Programmable Key Mode with Abort* limits programmable key activations to one and only one programmable key, with the further stipulation that *any* additional key activation will cause the initial key's break code to be issued immediately. No further key scan codes will be sent until all keys are released and new key activation(s) made. There are two basic rules governing this feature as follows:

- If a programmable key is pressed, any secondary key activation – regardless of key group association – will immediately cause the latter key to be ignored and the break code of the initial key to be sent. No further scan code generation will occur until after all keys are first released.

- Multiple key presses within the fixed key group will be allowed. However, if a programmable key is pressed while any fixed keys are currently activated, break codes for all active keys will be sent immediately. No further scan code generation will occur until after all keys are first released.

This feature will be global, per the two behavioral rules, and applies to all keys except the brightness control keys. When neither of the two *Single Programmable Key Modes* (with or without abort) is selected, any number of programmable (blue) keys can then be pressed and will be processed normally, just as they would be on a standard 101-key keyboard. This is *Standard Multi-Key Mode*.

Make/Break Non-Repeat Mode

This feature, as the name implies, allows the end-user to configure keys as make/break non-typematic (i.e., non-repeating). When a key is first pressed, the make code is sent one time. Regardless of the duration of the key activation, no autorepeating make codes will be sent thereafter. When the key is released, the break code is sent one time, as always.

The obvious exception to this condition is the brightness control keys -- they must be processed normally as in all other configuration cases. The programmable and fixed key groups can be independently configured to support this mode.

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Single Key Hold-Off Interval

This feature supports a user-definable key switch timeout period which ignores multiple instances of a single, same key press inside a timeout window (a scenario known as “key teasing”). The time-out would apply to any singular, recently pressed and released key(s).

For example, if key #1 is pressed and released with the timeout value is set for 0.5 seconds, the keypad controller will send the initial make/break codes, but will ignore any activation of that same key within a 1/2 second timeframe. It must be released for greater than 0.5 seconds before any new scan codes for it will be sent. However, a second key could be activated anytime after the first key is released.

Due to the firmware’s built-in key switch debounce algorithm, holdoff values of less than 50mS will not be supported. The options for the timeout period are: Disabled (no timeout period applies), 100mS, 250mS, 500mS, 1 second, 2 seconds, 3 seconds and 4 seconds.

Auxiliary Keyboard Enable

An auxiliary (external) keyboard can be disabled by deselecting this feature. If an external keyboard is unplugged and reconnected, the effect of the feature will remain persistent. In order to re-enable the auxiliary keyboard, this feature must be selected.

Ctrl-Shift-Esc Enable

Ctrl+Shft+Esc hot-key sequences – which in the Windows OS environment cause the Task Manager to launch -- are inhibited when this feature is deselected.

Installing the Keypad Configuration Utility

The Keypad Configuration Utility software is pre-installed on 6180 Computers that are shipped with the Windows operating system and a keypad. Installation disks are supplied with all 6180 Computers.

To install the Keypad Configuration Utility software using Control Panel:

1. Insert Disk 1 in Drive A: or Drive B:
2. Click the Start button, click Settings and then click the Control Panel.
3. Double-click the Add/Remove Programs icon.
4. On the Install/Uninstall tab, click the Install button.

Note: You can also uninstall the Keypad Configuration utility from this tab.

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5. Follow the install instructions on the screen.

To install the Keypad Configuration Utility software using Run:

1. Insert Disk 1 in Drive A: or Drive B:
2. Click the Start button and select Run from the menu.
3. Enter a:\setup in the Run dialog and click OK.
4. Follow the install instructions on the screen.

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File Types

The KCU Utility recognizes three file types.

File Type	Description
.KEY	Keypad configuration file
.BOO	Boot firmware file. Cannot be edited. Supplied by Allen-Bradley when upgrades of the boot code firmware are required.
.APP	Application firmware file. Cannot be edited. Supplied by Allen-Bradley when upgrades of the application firmware are required.

All file types can be downloaded to the Keyboard Interface Controller (KIC) in the 6180 Industrial Computer.

Connecting the Keyboard to the 6180 Computer

To use the Keypad Configuration Utility, connect an IBM AT standard keyboard and mouse with PS/2 connectors (if you do not have touch screen or touch mouse) to the 6180 computer. If you are using the front panel connectors, you must install jumper cables as shown below. These jumpers route the keyboard and mouse ports from the processor board to the front panel connectors. Make sure the correct ports are used.

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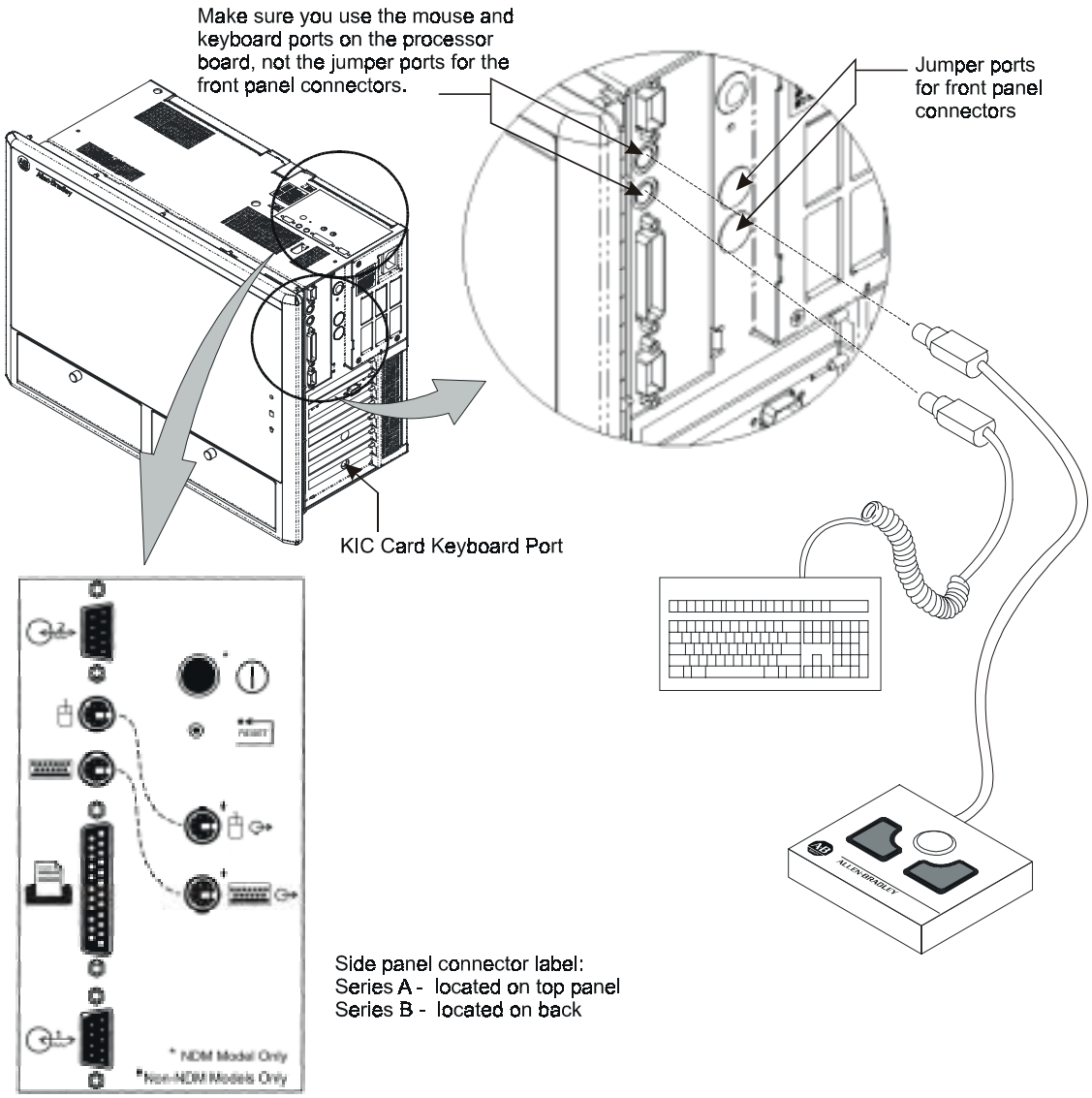
Figure 13- 2


Make sure you use the mouse and keyboard ports on the processor board, not the jumper ports for the front panel connectors.
Jumper ports for front panel connectors
KIC Card Keyboard Port
Side panel connector label:
Series A - located on top panel
Series B - located on back
* NDM Model Only
*Non-NDM Models Only

Alternatively, the mouse and keyboard can plug into the side panel mouse and keyboard ports.

Note: You must reconnect the patch cables for the keypad/KIC PS/2 connection to work.

The Keyboard Interface Controller (KIC) has a keyboard connector. If you use the side panel connectors, the KIC keyboard port is disabled.

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Using the KCU Utility

To run the KCU Utility:

1. For computers running Windows 95 or Windows NT:

   a. Click once on the Start button. Place the cursor over Programs. You will see the Programs submenu.

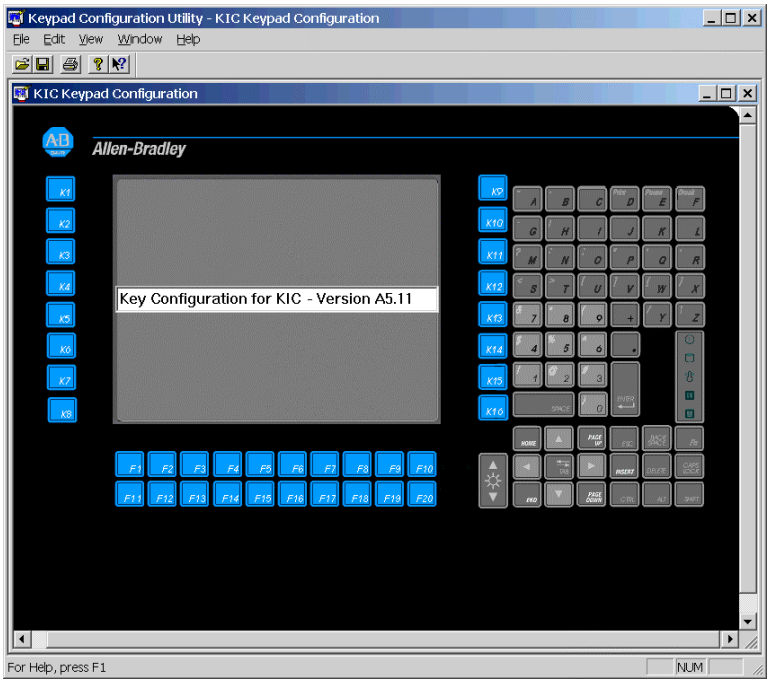
   b. Place the cursor over Keypad Configuration Utility.

   c. Click on the icon.

2. The Keypad Configuration Utility opens and shows the current keypad configuration stored on the KIC card. Depending on the computer type, the keypad configuration will be 64 key, 69 key, 70 key standard or full alphanumeric.

The window that contains the keypad configuration stored on the KIC card is named KIC Keypad Configuration.

Figure 13- 3


Keypad Configuration Utility - KIC Keypad Configuration
File Edit View Window Help
KIC Keypad Configuration
Allen-Bradley
Key Configuration for KIC - Version A5.11
For Help, press F1
NUM

You can now:

- modify the keypad configuration stored on the KIC card
- modify the keypad configuration and save it under a new .KEY file name
- open and modify an existing keypad configuration (.KEY) file
- open an existing firmware file (*.BOO or *.APP).

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Operations available from the menu bar are defined below.

Select commands on this menu:	To
File Menu	Open, close, save, preview, print and download keypad configurations or firmware upgrades
Edit Menu	Select keys, enable/disable keys, set the programmable keys to function keys or alpha keys, redefine programmable keys and edit keypad preferences
View Menu	Toggle the tool bar or status bar on or off, or view the firmware contents of the KIC card
Window Menu	Opens a new window and arranges open windows and keypad icons
Help Menu	Display a list of help topics or the current version number of the Keypad Configuration Utility

Keypad Configuration Window

Each keypad configuration appears as a separate window. All key editing is done within this window. You can:

- enable/disable all or specific keys
- set a default configuration for the programmable keys:
  - function keys or alpha keys on standard keypad
  - function keys on full alphanumeric keypad
- edit the definitions of the programmable keys
- enter a description of the keypad configuration

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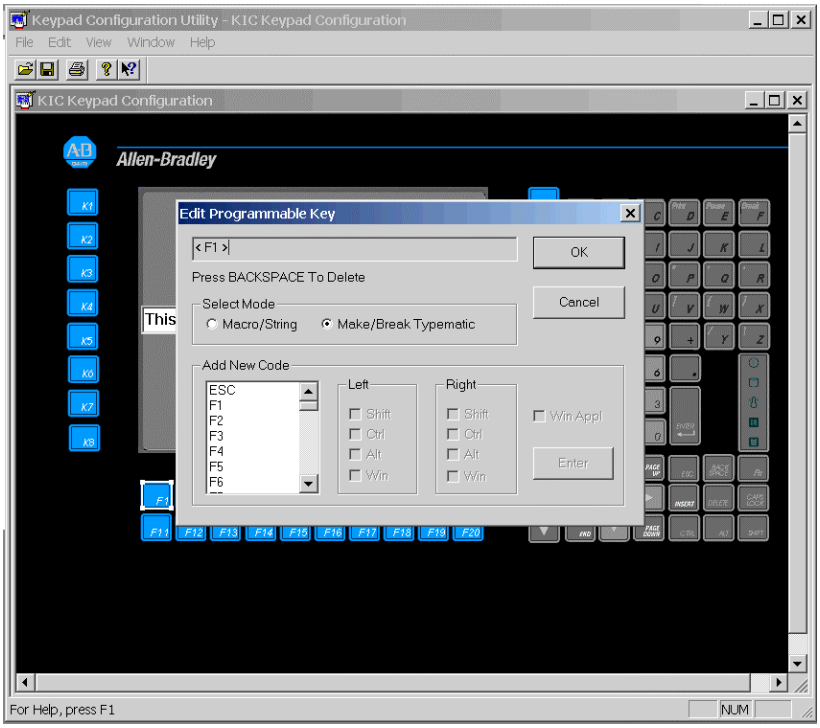
Figure 13- 4



Entering a Keypad Description

The text edit box at the bottom of the keypad configuration window allows you to enter a description to identify the keypad. The text edit box accepts up to 128 characters.

To edit a description, click in the text edit box and start typing or editing the text.

With the cursor in the text edit box, click the right mouse button to open the popup menu. Use the commands on this menu to copy/cut, paste and delete selected text. To select all the text in the description box, choose Select All from the popup menu.

The new keypad description takes effect when you select Store Keypad Configuration to KIC on the File menu.

Getting Help

You can get general Help information on the Keypad Configuration Utility by:

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- accessing the Help menu on the tool bar.
- clicking the Context Help tool to get context sensitive information.

Opening Keypad Configurations

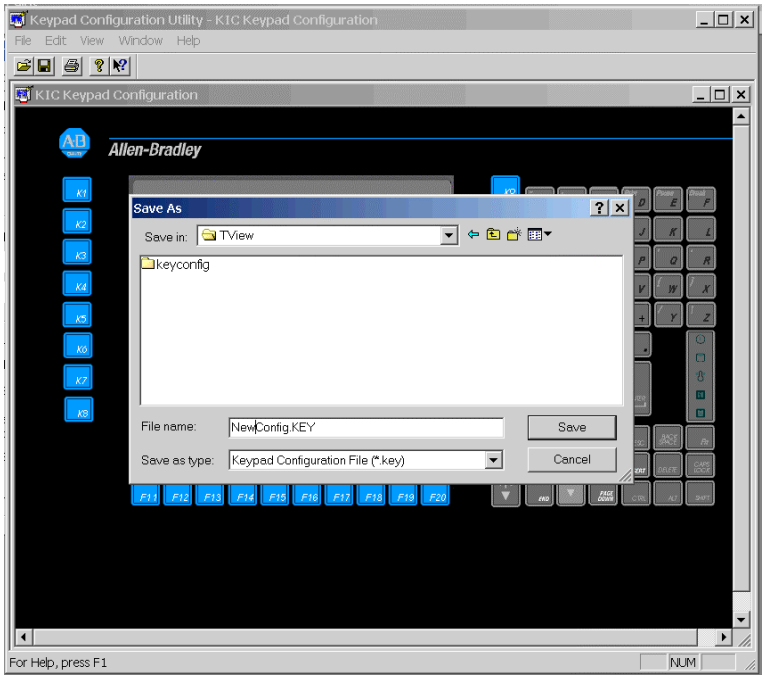
This section shows how to open:

- previously saved keypad configurations (*.KEY files)
- KIC Keypad Configuration stored on the KIC controller card.

To open an existing keypad configuration file:

1. Choose Open from the File menu or click on the tool bar.

Figure 13- 5



The dialog shows all keypad configuration files (.KEY) in the folder C:\Program Files\RAC6000\KeyConfig\.

2. Double-click the .KEY file you want to open or click on a .KEY file and then click the Open button.

   A window opens for the selected keypad configuration. The name of the .KEY file shows in the title bar.

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The window titled KIC Keypad Configuration is the configuration stored on the KIC card. If this window and all other keypad configuration windows are closed, you can reopen the KIC Keypad Configuration from the File menu.

To reopen the keypad configuration stored on the KIC card:

Choose Open KIC Keypad Configuration from the File menu.

A window opens with the KIC Keypad Configuration displayed in the title bar.

Selecting Keys

The table below shows how to select keys on the keypad. You must select a key before you enable/disable a key or redefine its function.

To Select:	Do This:	The result is:
Single key	Click the left mouse button on the key.	The selected key is highlighted with handles.
Group of keys	Click the left mouse button and drag the selection rectangle around the keys you want to select.	The selected key is highlighted with handles.
All keys	Choose Select All Keys from the Edit menu.	All keys are highlighted and appear with handles.
All Programmable Keys	Choose Select All Programmable Keys from the Edit menu.	All programmable keys are highlighted and appear with handles.
Multiple Keys	Click the left mouse button while holding down the Ctrl key.	The selected keys are highlighted and appear with handles.

Enabling and Disabling Keys

You can enable/disable all or specific keys on the keypad. By default, all keys are initially enabled.

Note: If the jumper P1 on the KIC board is in the non-default position 1-2 (see page XX), all keypad keys are hardware disabled.

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To disable one or more keys:

1. Select the key(s) you want to disable.

2. Choose Enable Key from the Edit Menu or click the right mouse button on the key and choose Enable Key from the popup menu.

A red X appears on the key, indicating that it is disabled and the check mark is removed from Enable Key on the Edit menu.

To enable a key:

1. Select the disabled key.

2. Choose Enable Key from the Edit Menu or click the right mouse button on the key and choose Enable Key from the popup menu.

The red X is cleared from the key, and a check mark appears next to Enable Key on the Edit menu.

If multiple keys are selected with some keys enabled and others disabled, choosing the Enable Key command will enable all the selected keys.

Setting Configuration of Programmable Keys (64-Key Standard Keypad)

On a 64-key standard keypad, you can set the default configuration of the programmable keys to Function Keys or Alpha Keys.

- Function Keys

  F1 - F12, S1 - S12 (shifted function keys)

Figure 13- 6

INSERT SCREEN CAPTURE HERE

Figure 13- 7

- Alpha Keys (lower case a-z)

INSERT SCREEN CAPTURE HERE

You can set the configuration for all programmable keys or a selected group of keys.

To set the default configuration to Function keys:

1. Choose Select All Programmable Keys from the Edit menu

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2. Choose Set Default Configuration Function Keys from the Edit menu.

The definitions of the programmable keys are updated:

- F1-F12 are defined as <F1> - <F12>
- S1-S12 are defined as <Left Shift+F1> - <Left Shift+F12>

Note: These are the factory default settings.

To set the default configuration to Alpha keys:

1. Choose Select All Programmable Keys from the Edit menu.
2. Choose Set Default Configuration _ Alpha (a-z) Keys from the Edit menu.

The definitions of the programmable keys are updated:

- F1-F12 are redefined as a – m.
- S1-S12 are redefined as n – z.

Please note that the key definitions change but the actual keys are not relabeled with lowercase characters.

To view the definition of a key:

- select the key and choose Key Configuration from the Edit menu.
- or click the right mouse button on the key and select Key Configuration from the popup menu.
- or select Print Preview from the File menu to view all keys.

Setting Configuration of Programmable Keys (96-Key Full Alphanumeric Keypad)

On a full alphanumeric keypad, you can set the default configuration of the programmable keys to the definitions listed below.

- Function Keys F1 - F10 and F11 - F20

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Figure 13- 8

INSERT SCREEN CAPTURE HERE

- Function Keys K1 - K8 and K9 - K16

You can set the configuration for all programmable keys or a selected group of keys.

To set the default configuration to Function keys:

1. Choose Select All Programmable Keys from the Edit menu
2. Choose Set Default Configuration _ Function Keys from the Edit menu.

The definitions of the programmable keys are updated:

- F1 - F10 are defined as <F1> – <F10>
- F11 - F20 are defined as <Left Shift+F1> – <Left Shift+F10>
- K1 - K8 are defined as <Left Ctrl+F1> – <Left Ctrl+F8>
- K9 - K16 are defined as <Left Ctrl+Left Shift+F1> – <LeftCtrl+Left Shift+F8>

Note: These are the factory default settings.

Please note that the key definitions change but the actual keys are not relabeled.

To view the definition of a key:

- select the key and choose Key Configuration from the Edit menu.
- or click the right mouse button on the key and select Key Configuration from the popup menu.
- or select Print Preview from the File menu to view all keys.

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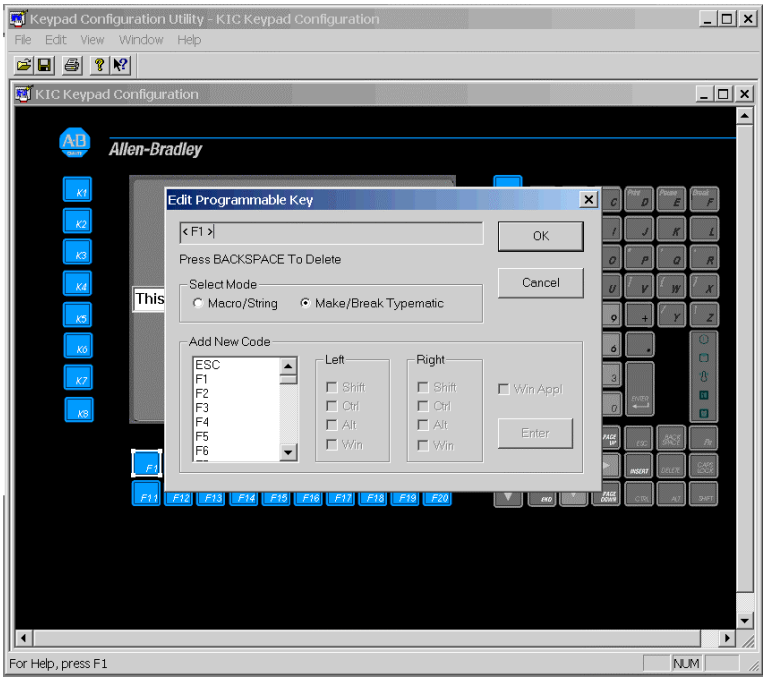
Figure 13- 9



Setting Configuration of Programmable Keys (69-Key Standard Keypad)

NEED TEXT FOR THIS SECTION:

On a standard keypad, you can set the default configuration of the programmable keys to Function Keys or Alpha Keys.

-
-

Figure 13- 10

INSERT SCREEN CAPTURE HERE

Setting Configuration of Programmable Keys (70-Key Standard Keypad)

On a standard keypad, you can set the default configuration of the programmable keys to Function Keys or Alpha Keys.

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- Function Keys (K1-K12)
- Alpha Keys (uppercase A – Z)

Figure 13- 11

INSERT SCREEN CAPTURE HERE

You can set the configuration for all programmable keys or a selected group of keys.

To set the default configuration to Function keys:

1. Choose Select All Programmable Keys from the Edit menu
2. Choose Set Default Configuration _ Function Keys from the Edit menu.

The definitions of the programmable keys are updated:

- K1-K12 are defined as F1-F12
- A–L are defined as F1–F12
- M is disabled
- N–Y are defined as <Left Shift+F1> - <Left Shift+F12>
- Z is disabled

To set the default configuration to Alpha keys:

1. Choose Select All Programmable Keys from the Edit menu.
2. Choose Set Default Configuration _ Alpha (A–Z) Keys from the Edit menu.

The definitions of the programmable keys are updated:

- A-Z are defined as a–z
- K1–K12 are defined F1–F12

Note: These are the factory default settings.

To view the definition of a key:

- select the key and choose Key Configuration from the Edit menu.
- or click the right mouse button on the key and select Key Configuration from the popup menu.
- or select Print Preview from the File menu to view all keys. You must define a default printer before using Print Preview.

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Figure 13- 12

INSERT SCREEN CAPTURE HERE

Editing Definitions of Programmable Keys

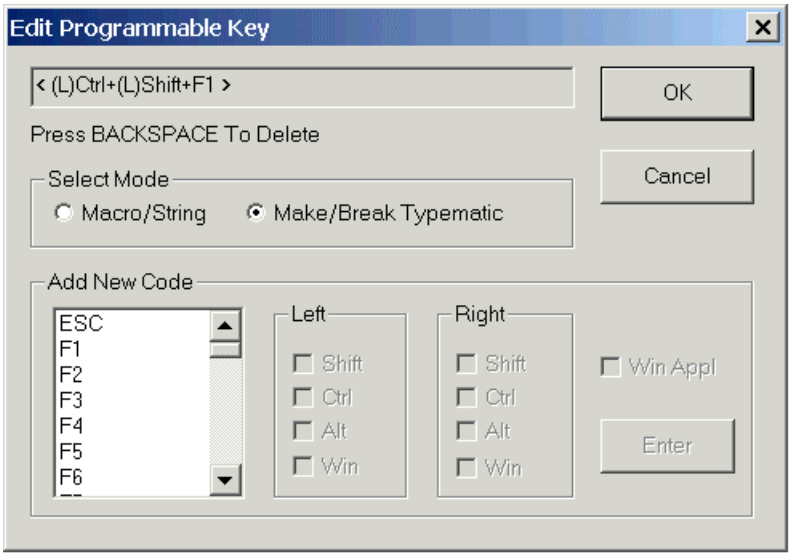
The Edit Programmable Key dialog lets you modify the key code definitions of the programmable keys on the computer's faceplate. The definitions are stored in the flash memory of the Keyboard Interface Controller (KIC). Modifying the default key codes/modes is not recommended unless required by the application software.

If you modify the default codes and your computer is replaced in the future, you must either:

- transfer the old KIC to the new computer
- modify the key codes in the new KIC card to match the existing application. Save the key code definitions to a Keypad Configuration file (*.key) for later recall.

Text Edit Box

Figure 13- 13



Displays the current key code definition for a selected programmable key. You can enter a new key code definition directly into the edit box if the characters are printable (e.g., alphanumeric characters). You must

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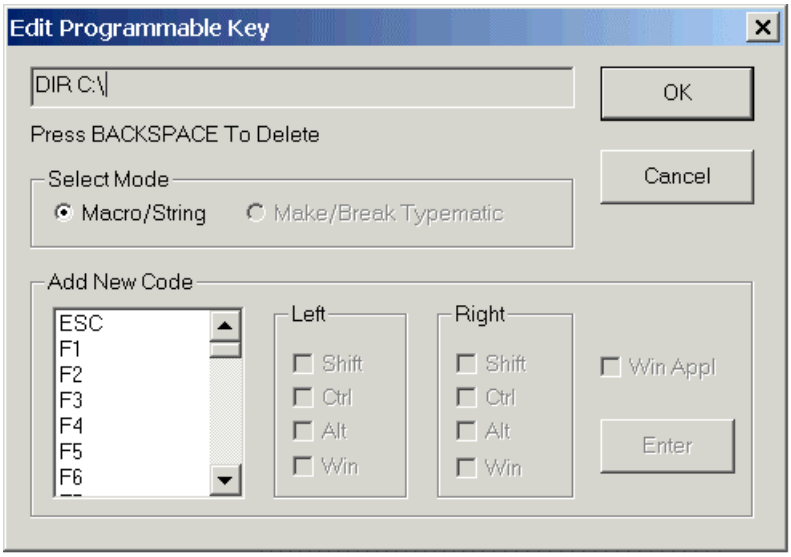
enter nonprintable characters from the Add New Code list. Use Backspace to remove existing codes and correct typing errors.

Select Mode

Displays the current mode for a selected programmable key. Select Macro/String or Make/Break Typematic to enable a mode.

In **Macro/String** mode, all Make and Break key codes are sent as a single string when the key is first pressed.

Figure 13- 14



In **Make/Break Typematic** mode, the Make codes are sent when the key is first pressed and the Break codes are sent when the key is released. If the key is held down, the make codes are repeated at the typematic rate.

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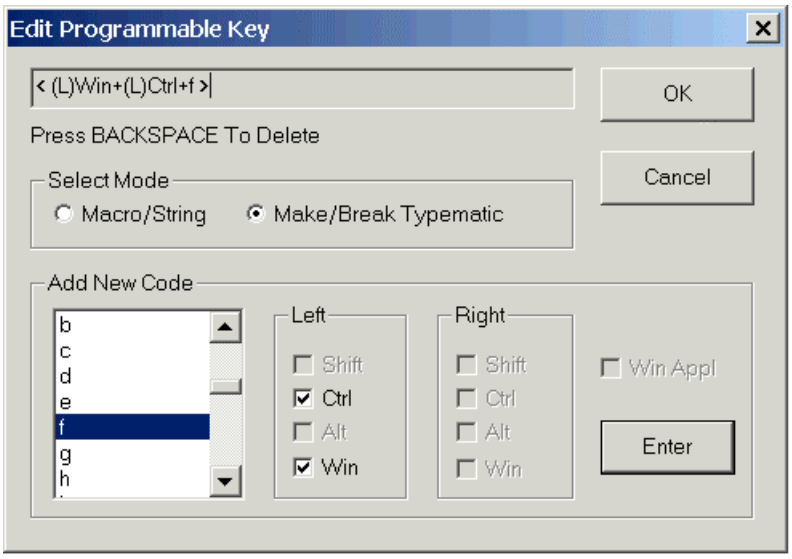
Figure 13- 15



The default is Make/Break Typematic.

Make/Break is available only for a single key code definition including its modifiers.

For earlier firmware versions that do not support Make/Break, the Select Mode is inactive (grayed).

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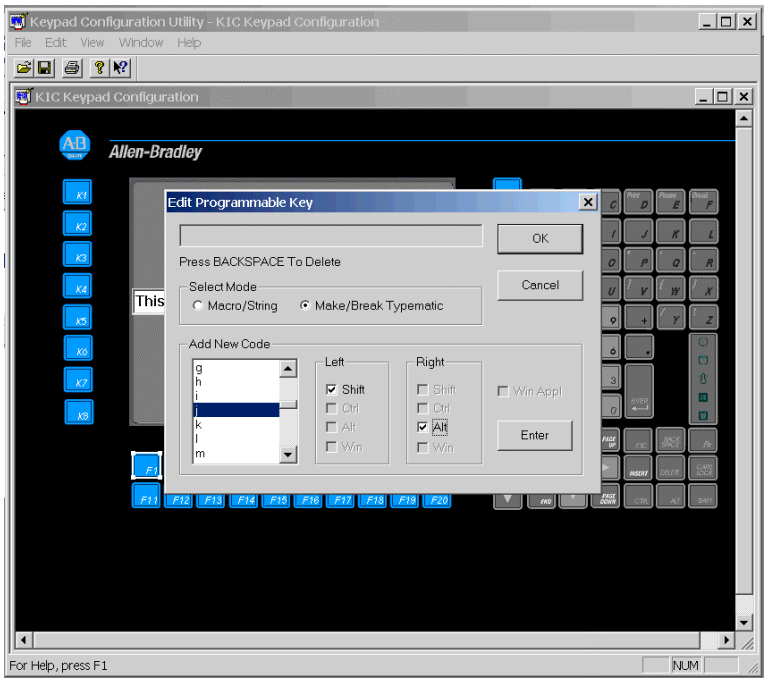
Add New Code

Figure 13- 16



Displays a list of valid keys and modifiers that you can assign to a programmable key. Modifier (Shift, Ctrl, Alt, Win or Win Appl) are enabled for a key code, by selecting the appropriate check boxes.

These check boxes are dynamically updated so that only valid combinations are allowed.

After selecting a key code and modifiers, click the Enter button to display the new code in the Text Edit box. You must click Enter after each new code selection.

General Guidelines for Redefining Keys

The Keyboard Interface Controller (KIC) card allocates 64 bytes of flash memory for the scan codes assigned to each programmable key.

A programmable key may be assigned:

- a single printable or a single nonprintable key code (for example the letter a or F1 or Left Ctrl+Left Alt+a).
- multiple printable or multiple nonprintable key codes (for example, a Shell command such as DIR C:\, or Left Ctrl+a and Left Alt+b).

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In general, an unshifted, printable character uses 3 bytes and a modified code uses more than 3 bytes.

The following guidelines apply when editing definitions of the programmable keys.

- Commands are limited to 20 shifted or 21 unshifted printable characters.
- Avoid entering shifted and unshifted characters in a definition. Using both in a definition requires more memory.

The utility does not allow you to:

- enter definition for a programmable key that exceeds 64 bytes
- enter multiple key codes for a programmable key that is make/break typematic.

To edit the definition of a programmable key:

1. Select a single programmable key.

2. Choose Key Configuration from the Edit menu.

Or click the right mouse button on the key and choose Key Configuration from the popup menu.

A dialog shows the current definition of the programmable key. Nonprintable key codes appear in brackets, for example, <F1> or <(L)Shift+F1>. Modifiers appear to the left of a "+" symbol.

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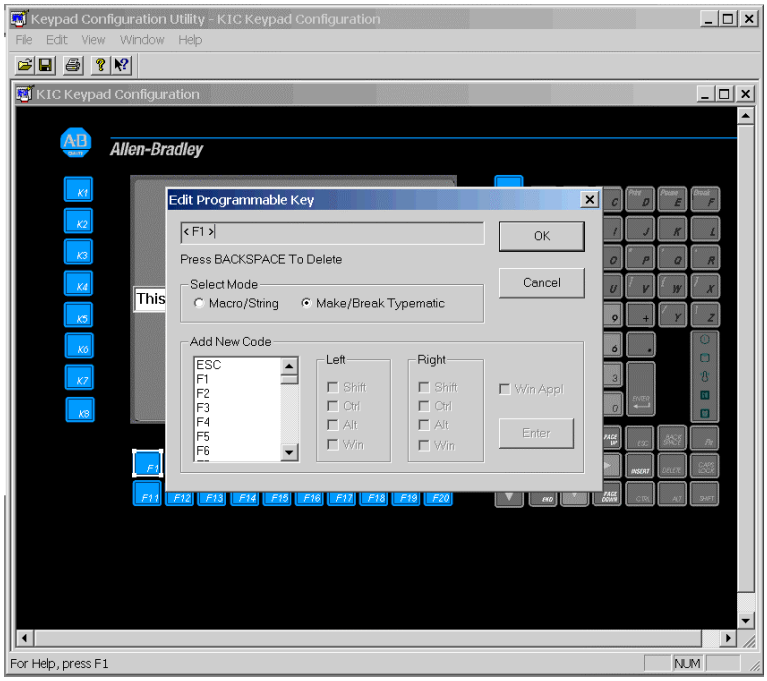
Figure 13- 17



3. Edit the key definition.

To select a key definition from the Add New Code list:

- Select (or click on) a code in the Add New Code list.
- Under Left or Right, select the Shift, Ctrl, Alt, or Win check boxes to enable one or modifiers for the code.

To enter the shifted character for a code (e.g., A) select the left or right Shift check box after selecting the code a.

To assign the Windows Application modifier to a code, select the WinAppl check box.

- Click Enter to display the new code in the text box.

If entering multiple codes, click Enter after each code selection or double-click each code selection. The text box is automatically updated.

To enter a command or key definition in the Text box:

- Type the characters in the Text box as you want them to appear using shifted or unshifted characters.

Use the Backspace key to delete characters and re-enter text.

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- To insert a nonprintable code in the text, select the code from the Add New Code list and then click Enter. The nonprintable code is inserted in the text with brackets.

1. Under Select Mode, select Macro/String or Make/Break Typematic.

2. Click OK to save the definition and close the dialog.

To save the new key code definitions to KIC flash memory, use the Store Keypad Configuration Command on the File menu.

Examples of Editing Key Definitions

To redefine the F1 key as <Ctrl+Win+F> which is the Find Computer function in Windows:

Figure 13- 18

INSERT GRAPHIC OF 12 AND 15 INCH SCREEN.

1. Select the key labeled K1.

2. Choose Key Configuration from the Edit menu.

   Or click the right mouse button on the key and choose Key Configuration from the popup menu.

3. In the text box, backspace to delete the current definition.

4. Under Select Mode, select Make/Break Typematic.

5. Select ’f’ from the Add New Code list.

6. Under Left, select the Ctrl check box, then the Win check box.

7. Click the Enter button to display the new definition.

Figure 13- 19

INSERT SCREEN CAPTURE HERE

8. Click OK to store the definition and exit the dialog.

To redefine the F12 key to perform a DIR C:\ command:

1. Select the key labeled K12.

2. Choose Key Configuration from the Edit menu.

   Or click the right mouse button on the key and choose Key Configuration from the popup menu.

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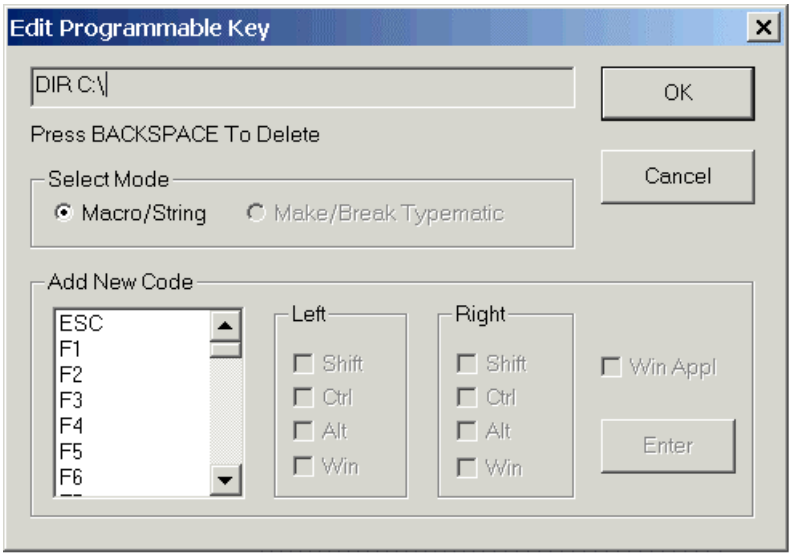
3. In the text box, backspace to delete the current definition
4. Under Select Mode, select Macro/String
5. In the text box, type DIR C:\

Figure 13- 20



6. Click OK to store the definition and exit the dialog.

To redefine the F6 key to perform the RUN RSPROGRAM <ENTER> command:

1. Select the key labeled F6.
2. Choose Key Configuration from the Edit menu.
3. In the text box, backspace to delete the current definition
4. Under Select Mode, select Macro/String.
5. In the text box, type RUN RSPROGRAM

Figure 13- 21

INSERT SCREEN CAPTURE HERE

6. Select Enter from the Add New Code list and click the Enter button. The nonprintable code is inserted in the Text box.

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7. Click OK to store the definition and exit the dialog.

Editing Keypad Preferences

Select Keypad Preferences from the Edit menu to:

- enable or disable the Ctrl+Alt+Delete function.

If enabled, the keypad recognizes this key sequence as a warm reset.

If disabled, the Delete key is ignored in the sequence, inhibiting a warm reset. The default is enabled.

- enable or disable simultaneous presses of remapped and/or modifier keys.

If enabled, the keypad recognizes simultaneous key presses of remapped keys with or without the Ctrl, Alt, or Shift keys.

If disabled, pressing a programmable key inhibits all other key presses. Pressing a non-programmable Ctrl, Alt, or Shift key inhibits any program key. The default is disabled.

Figure 13- 22

INSERT SCREEN CAPTURE HERE

For earlier firmware versions that do not permit modification, the dialog is inactive (grayed).

Note about Multi-key Enable: Some software applications may operate erratically when responding to simultaneous, multiple key presses. The Multi-Key Enable option of 6180 Industrial Computers allows you to enable/disable multiple key presses for predictable, reliable operation.

6180 Industrial Computers are shipped with a Multi-Key Enable function, that is enabled (by default) for the keypad. Simultaneous key presses of programmable keys are inhibited by this default setting. In addition, all programmable keys are inhibited when a Ctrl, Alt or Shift key is pressed. For example, <Alt + F>, a shortcut key combination for the File menu function in many applications, is inhibited.

Saving Keypad Configurations

You can save a keypad configuration under the existing name or under a new name.

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Save

Choose Save from the File menu or click on the tool bar to save changes to a keypad configuration under the current name. The default filename for the keypad configuration stored on the KIC card is KIC.KEY. The first time you try to save a configuration, the Save As dialog opens.

Save As

Choose Save As from the File menu to save the keypad configuration under a new file name. This command saves the original version of the keypad configuration without edits and the modified version under a new name. The default file type for keypad configuration files is .KEY.

Figure 13- 23

INSERT SCREEN CAPTURE HERE

Previewing and Printing a Keypad Report

The KIC utility creates a report for each Keypad configuration file. You can print the report or preview the report first and then print it.

Print Preview is a convenient way to view the keypad configuration.

To preview a keypad configuration:

1. Open the .KEY keypad configuration file you want to preview.

2. Choose Print Preview from the File menu.

The Preview workspace opens showing the keypad report. The report includes:

- keypad configuration file name .KEY or “KIC Keypad Configuration” if the keypad configuration stored on the KIC card is the current focus.
- date/time report generated
- description field of the keypad configuration
- list of Non-programmable keys (enabled or disabled)
- definitions of programmable keys (enabled or disabled), and whether the key code definition is Macro/String or Make/Break Typematic.
- keypad preferences (Multi-Key Enable and Ctrl–Alt–Del Enable).

Macro/String definitions appear in double quotes. Make/Break Typematic definitions appear in single quotes.

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Disabled keys appear with a line through the key name and definition.

3. Select one of the buttons at the top of the workspace.

Click this button:	To:
Print	Open a Print dialog allowing you to print the report. See the next page.
Zoom In	Increase the magnification of the view so the report looks larger. You can increase the magnification several times.
Zoom Out	Decrease the magnification of the view so the report looks smaller. You can decrease the magnification several times.
Close	Exit the Preview workspace.

To print a keypad report:

1. Open the .KEY keypad configuration file.

2. Choose Print from the File menu or click on the tool bar.

   Or choose Print Preview from the File menu and select Print at the top of the Preview workspace.

A Windows Print dialog opens.

Figure 13- 24

INSERT SCREEN CAPTURE HERE

3. Select a printer from the Name list.

   If the printer you want to use is not listed, choose Print Setup from the File menu.

4. Select the number of copies and other Properties.

   Print all reports in Portrait (not Landscape) mode.

5. Click OK to print the report.

Viewing Contents of KIC Card

To view the current contents of the KIC card, choose KIC Contents from the View menu. This command displays:

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- Description of the Keypad Configuration (entered on the Keypad Configuration Window)
- Firmware version of the Boot Code
- Firmware version of the Application Code

Downloading a Keypad Configuration to the KIC Card

To download a keypad configuration to the KIC card:

1. The active window must contain the keypad configuration you want to download to the KIC card.

   If you updated the KIC Keypad Configuration stored on the KIC card, save the configuration to a file before downloading. Save to a new file or overwrite the existing .KEY file.

2. From the File menu, choose Store Keypad Configuration to KIC.

   A dialog opens asking you if want replace the current contents of the KIC flash memory with the contents of the active window.

3. Click OK to continue with the download.

Upgrading the Application Code Firmware

This section shows how to upgrade the application firmware (*.APP) stored on the KIC Card.

Note: You cannot edit the application firmware file (*.APP).

Allen-Bradley supplies this file when an upgrade of the KIC card is required.

To upgrade the application firmware on the KIC card:

1. Choose Open From the File menu.

2. Select Application Firmware Upgrade File (*.APP) from the Files of type list box.

3. Double-click the *.APP file or select the file and click Open.

   A dialog opens showing details of the .APP upgrade file.

   - file type is KIC Application Code
   - file name of the application code firmware

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- last modification date/time of file
- description and version number of the application code firmware

4. Choose Upgrade KIC Application Firmware from the File menu.

   A dialog opens asking if you want to replace the application code contents of the KIC flash memory with the contents of the current window.

5. Click OK to continue with the download.

Upgrading the Boot Code Firmware

This section shows how to upgrade the boot code firmware (*.BOO) stored on the KIC Card. Upgrading of the boot code firmware is not normally required, even if the application code firmware is upgraded.

Upgrading the boot code firmware on the KIC card requires:

- setting the P2 jumper to the correct position on the KIC card.
- downloading the boot code *.BOO file to the KIC card.

Note: You cannot edit the boot code firmware file (*.BOO).

Allen-Bradley supplies this file when an upgrade of the KIC card is required.

Setting the P2 Jumper

When upgrading the boot code firmware, the P2 jumper on the KIC card (in the computer) must be in the Normal position. The position of the P2 jumper and its location on the KIC card is shown below.

Figure 13- 25

INSERT SCREEN CAPTURE HERE

Note: Removing Jumper P2 from the board enables write protection. With write protection enabled, the Keypad Configuration Utility cannot write to the KIC boot code.

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Upgrading the boot code firmware to the KIC card:

Note: You cannot edit the boot code firmware file (*.BOO).

Allen-Bradley supplies this file when an upgrade of the KIC card is required.

1. Choose Open From the File menu.
2. Select Boot Firmware Upgrade File (*.BOO) from the Files of type list box.
3. Double-click the selected file or select the file and click Open.

A dialog opens showing details of the *.BOO upgrade file.

- file type is KIC Boot Code
- file name of the boot code firmware
- last modification date/time of file
- description and version number of the boot code firmware

4. Choose Upgrade KIC Boot Firmware from the File menu.

A dialog opens asking if you want to replace the boot contents of the KIC flash memory with the contents of the current window.

5. Click OK to continue with the download.

Changing Keypad Configuration Utility Preferences

Alphanumeric 6180 Industrial Computers are shipped with the following keypad features disabled:

- Single Programmable Key Mode with Abort
- Make/Break Non-Repeat Mode
- Single Key Hold-Off Interval

Alphanumeric 6180 Industrial Computers are shipped with the following keypad features enabled:

- Auxiliary Keyboard Enable
- Ctrl-Shift-Esc Enable
- Ctrl-Alt-Del Enable
- Single Programmable Key Mode

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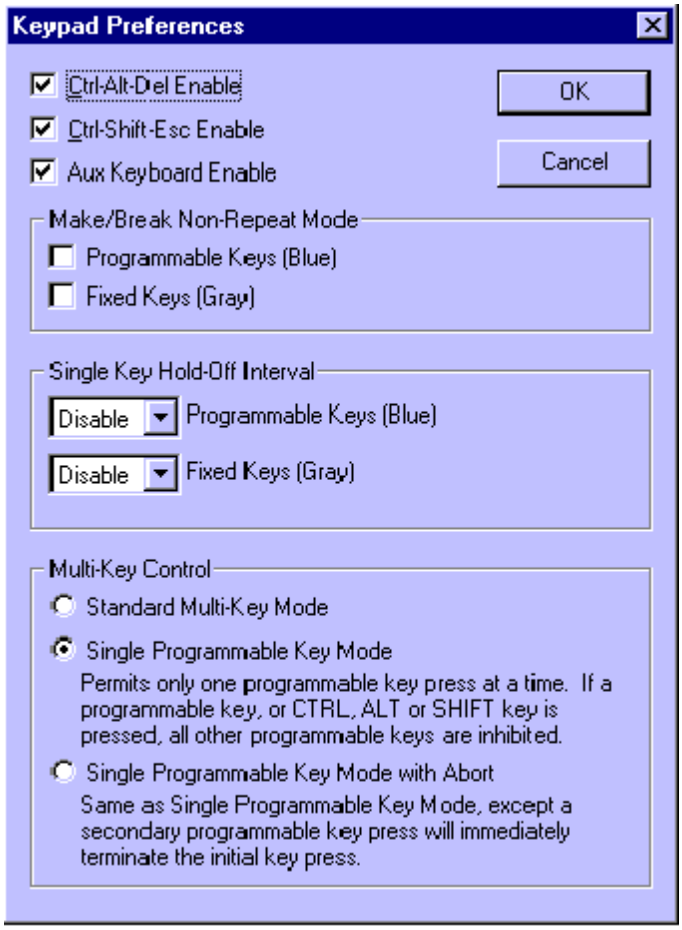
The following figure shows how the new feature controls are presented in the KCU's Keypad Preferences window (default feature configuration shown):

Figure 13- 26


Keypad Preferences
Ctrl-Alt-Del Enable
Ctrl-Shift-Esc Enable
Aux Keyboard Enable
OK
Cancel
Make/Break Non-Repeat Mode
Programmable Keys (Blue)
Fixed Keys (Gray)
Single Key Hold-Off Interval
Disable
Programmable Keys (Blue)
Disable
Fixed Keys (Gray)
Multi-Key Control
Standard Multi-Key Mode
Single Programmable Key Mode
Permits only one programmable key press at a time. If a programmable key, or CTRL, ALT or SHIFT key is pressed, all other programmable keys are inhibited.
Single Programmable Key Mode with Abort
Same as Single Programmable Key Mode, except a secondary programmable key press will immediately terminate the initial key press.

If either a non-Alphanumeric keypad configuration or a version of KIC Alphanumeric firmware older than A5.02 is detected by the KCU, the Keypad Preferences window will be displayed with the new feature selection controls grayed out. This is because they don't apply.

Enabling Single Programmable Key Mode with Abort

If you want to inhibit simultaneous presses of programmable keys and cause an abort of all key scan code activity if a multi-key sequence does occur, do the following:

6. Run the Keypad Configuration Utility from the **Start>Programs** menu.

7. From the Edit menu, select **Keypad Preferences**.

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The Keypad Preferences dialog is displayed.

8. Select the **Single Programmable Key Mode with Abort** button.

9. From the File menu, select **Store Keypad Configuration to KIC**.

Multi-key presses of programmable keys are now inhibited and will generate a global key abort if they are attempted.

Note: *Standard Multi-Key Mode*, *Single Programmable Key Mode* and *Single Programmable Key Mode with Abort* are mutually exclusive modes; only one mode may be selected at a time.

Enabling Make/Break Non-Repeat Mode

If you want to prevent key autorepeating:

1. Run the Keypad Configuration Utility from the **Start>Programs** menu.

2. From the Edit menu, select **Keypad Preferences**.

   The Keypad Preferences dialog is displayed.

3. Select the *Make/Break Non-Repeat Mode* box of the key group to which you wish to apply this feature.

   Both the programmable and fixed key groups can be selected simultaneously, if desired.

4. From the File menu, select **Store Keypad Configuration to KIC**.

When a programmable key is now pressed, only a single Make code will be generated when the key is initially pressed, and the Break code will be generated when the key is released.

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Enabling Single Key Hold-Off Interval

If you want to prevent “key teasing” for an end-user specified interval:

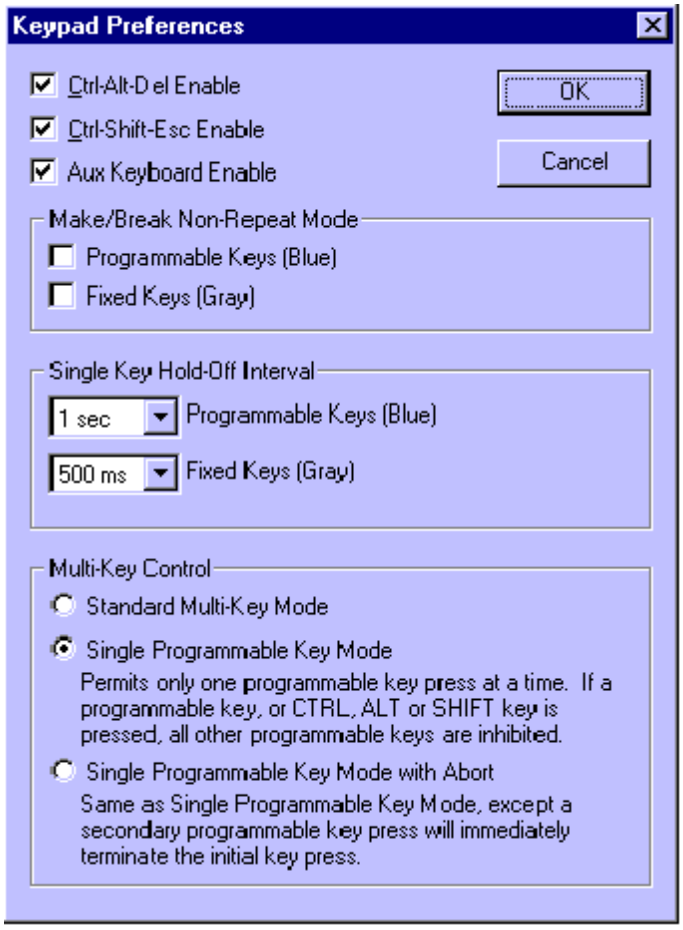
1. Run the Keypad Configuration Utility from the **Start>Programs** menu.

2. From the Edit menu, select **Keypad Preferences**.

   The Keypad Preferences dialog is displayed.

3. Select the desired time value from the drop-down menu for either the programmable or the fixed key groups (or both). In the example shown below, a value of 1 sec is selected for the programmable key group and 500 ms is selected for the fixed key group.

Figure 13- 27


Keypad Preferences
Ctrl-Alt-Del Enable
Ctrl-Shift-Esc Enable
Aux Keyboard Enable
OK
Cancel
Make/Break Non-Repeat Mode
Programmable Keys (Blue)
Fixed Keys (Gray)
Single Key Hold-Off Interval
1 sec
Programmable Keys (Blue)
500 ms
Fixed Keys (Gray)
Multi-Key Control
Standard Multi-Key Mode
Single Programmable Key Mode
Permits only one programmable key press at a time. If a programmable key, or CTRL, ALT or SHIFT key is pressed, all other programmable keys are inhibited.
Single Programmable Key Mode with Abort
Same as Single Programmable Key Mode, except a secondary programmable key press will immediately terminate the initial key press.

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4. From the File menu, select **Store Keypad Configuration to KIC**.

When a program key is now pressed and released, a further press of the same key within 1 second will be ignored. A full second must pass from the *last* time the key was pressed before it can be used again (an "ignored" key will constitute a "last" key press). Likewise, a fixed key will behave in the same manner, except the timeout will be 500 ms.

Disabling the Auxiliary Keyboard

If you want to disable an external keyboard:

1. Run the Keypad Configuration Utility from the **Start>Programs** menu.
2. From the Edit menu, select **Keypad Preferences**.

   The Keypad Preferences dialog is displayed.
3. Uncheck the **Aux Keyboard Enable** box.
4. From the File menu, select **Store Keypad Configuration to KIC**.

An external keyboard is now disabled.

Inhibiting Ctrl-Shift-Esc

If you want to inhibit the Ctrl-Shift-Esc hot-key sequence:

1. Run the Keypad Configuration Utility from the **Start>Programs** menu.
2. From the Edit menu, select **Keypad Preferences**.

   The Keypad Preferences dialog is displayed.
3. Uncheck the **Ctrl-Shift-Esc Enable** box.
4. From the File menu, select **Store Keypad Configuration to KIC**.

Ctrl-Shift-Esc hot-key sequences are now inhibited.

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Touchscreen Drivers and Utilities

Chapter Objective

This chapter describes how to set up and use touchscreen utilities.

Touchscreen IRQ Configuration

The touchscreen controller and software installed in your system have been changed since the release of the v2.0 Touchscreen System User's Guide. Be aware of the following differences in operation:

Allen-Bradley 6180 Industrial Computers typically use interrupt level 9 (IRQ9) for the touchscreen controller hardware. By traditional PC convention, IRQ 9 is unused by system board hardware and therefore is made available to ISA add-in cards. However, some recent system boards, such as Intel's SE440BX (Seattle) motherboard, automatically reserve IRQ 9 for system board functions (such as power management). Because of this, the touchscreen controller hardware in your computer, as well as the touchscreen software drivers, have been changed to support reconfiguration of the selected IRQ. This is sometimes referred to as "interrupt steering".

Newer versions of the touchscreen software will auto-detect the type of system board installed in your computer. Based on the system board's interrupt requirements, the software will either:

- leave the selected interrupt at the power on configuration (IRQ 9)
- or "steer" the interrupt to some other unused IRQ level to avoid resource conflicts.

The IRQ configuration conforms to the following table.

System Configuration	System Board Type	IRQ
6180-Axxxxxxxxxxx	Advanced/ML (Marl)	9
6180-Bxxxxxxxxxxx	Advanced/ML w/MMX (Marl MMX)	9
6180-Cxxxxxxxxxxx	PD440FX (Portland)	9
6180-Dxxxxxxxxxxx	SE440BX (Seattle)	5

For computers without a touchscreen, no IRO is selected

The following versions of the touchscreen software support the reconfigurable interrupt feature:

- For Windows *95/98* →v2.2.2 or later

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- Windows NT 4.0 → v2.2.1 or later

Touchscreen Software Installation

The touchscreen software installation utility automatically selects the interrupt suitable for your system's configuration as listed in the table above.

Your computer is shipped with the touchscreen software installed. If you have to re-install the touchscreen software, the IRQ is automatically selected for you. You do not have to select IRQ 9 from a list of interrupts as described in the V2.0 Touchscreen System User's Guide.

In addition, the I/O address used by the touchscreen hardware has been expanded to include 321h (I/O range is now 320-321h).

DOS Systems

If your computer runs in a DOS environment, there are several software calibration and setup tools included in your software package. These tools require that you enter the IRQ and I/O base address (decimal notation) in the command line:

- If your computer is a 6180-Axxxxxxxxxxx, 6180-Bxxxxxxxxxxx or 6180-Cxxxxxxxxxxx catalog number, follow the instructions provided in the Touchscreen System User's Guide.
- If your computer is a 6180-Dxxxxxxxxxxx catalog number, follow the instructions provided in the Touchscreen System User's Guide but substitute IRQ 5 wherever you see IRQ2 (synonymous with IRQ9).

Example #1; To calibrate your touchscreen in a 61 80-Axxxxxxxxx DOS based system you would type: **PC2CAL 2 800 <Enter>** This configures the software to use IRQ 9 and I/O 320h.

Example #2; To calibrate your touchscreen in a 6180-Dxxxxxxxxx DOS based system you would type: PC2CAL 5 **800 <Enter>** This configures the software to use IRQ *5* and I/O 320h.

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System Troubleshooting

Chapter Objective

This chapter describes the most common operating problems, the probable causes, and recommended corrective actions including:

- LANDesk summary
- troubleshooting procedure
- troubleshooting checklists
- bootup error messages
- general error and information messages

LANDesk Summary

For units with the Pentium III processor, LANDesk Client Manager software is included on a CD-ROM. The LANDesk software enables a user to:

- Monitor and manage third-party DMI-compliant components
- Backup and restore system configuration files
- Receive notification of certain system events

For units containing a Pentium II processor, the LANDesk Client Manager software is included on a CD-ROM. For Pentium III units having a pre-installed operating system, the LANDesk software is also pre-loaded on the hard disk.

Units containing the pre-loaded LANDesk software will contain a desktop icon called LANDesk Setup. To install the customized LANDesk software, double-click this icon.

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Units not having the pre-loaded LANDesk software require the CD-ROM to install the LANDesk software. For these units, please note the following parameter settings:

Fan Sensor		
Chassis Fan		
	Nominal Speed	3100 RPM
	Threshold (80%)	2480 RPM
	Minimum Threshold	2000 RPM
Power Supply Fan		
	Nominal Speed	4200 RPM
	Threshold (80%)	3360 RPM
	Minimum Threshold	2700 RPM

Temperature Requirements (Motherboard)	
Nominal Temperature	32° C
Threshold	60° C
Maximum Threshold	90° C

Voltage Requirements (Motherboard)		
Nominal Voltage		
+12 VDC	Threshold Deviation	_2.00 VDC
	Max. Threshold Deviation	_2.00 VDC
-12 VDC	Threshold Deviation	_2.00 VDC
	Max. Threshold Deviation	_2.00 VDC
+5 VDC	Threshold Deviation	_0.80 VDC
	Max. Threshold Deviation	_1.00 VDC
-5VDC	Threshold Deviation	_0.80 VDC
	Max. Threshold Deviation	_1.00 VDC
+3.3VDC	Threshold Deviation	_0.35 VDC
	Max. Threshold Deviation	_0.70 VDC

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Troubleshooting Procedure

To help identify and isolate a problem, we recommend that you do the following when a problem occurs:

1. Turn off the power to the 6180 Computer.

2. Disconnect any peripheral devices such as printer.

3. Connect the keyboard and mouse (if used) to the side panel connectors. These connectors are connected directly to the processor board.

4. Check the monitor connections.

5. If the system normally loads from the hard drive, make sure there is not a disk in the floppy drive.

6. Apply power and observe the LEDs on the front panel (if present). Make sure the power on indicator is illuminated.

7. Monitor the Power On Self Test (POST). One of 3 events will occur:

   - The 6180 Computer will complete the bootup process.

   - An error message will occur indicating a non–fatal fault. You may have to acknowledge the message before the bootup process is allowed.

   - The boot process will terminate (fatal error).

   If a fatal or non–fatal error occurs, note the displayed message and refer to the error message descriptions at the end of this chapter.

8. If the system boots up, isolate the problem by connecting peripheral devices one at a time until the problem occurs. If the problem is with a specific software package, you may want to re–install the software.

9. If there is a problem not related specifically to a software installation or peripheral device, refer to the following troubleshooting checklists.

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Troubleshooting Check Lists

The following are checklists of items that you may have overlooked.

If you are having problems during bootup:

√ Are all connections secure?

√ Are the device drivers installed?

√ Are the jumpers on the processor board correctly positioned (refer to the separate *Processor Board User Manual*)?

√ Are the jumpers on any add–in boards correctly positioned?

√ Is the hard drive formatted and defined?

√ Are the RAM memory (SIMMs) properly installed? You may want to re–install them to ensure a good connection.

√ Is the IDE cable from the hard drive properly connected? You may want to see if the system will boot from a floppy drive.

√ Is BIOS properly configured (refer to the separate *Processor Board User Manual*)?

If there is a problem after bootup:

√ If you are running a software package, re–install the software.

√ If the problem is intermittent, you may have a loose connection. Check all connections including any ISA / PCI cards. Check that the memory modules (SIMMs) are fully installed.

√ Does your system have a virus? Run anti–virus software if it is available.

√ Try clearing CMOS and running BIOS Setup (refer to the separate *Processor Board User Manual*).

√ Although the 6180 Computer has a regulated and protected power supply, a transient voltage in the power line or peripheral cable may cause a flickering display, unexpected reboots, or a locked up system. If so exit the application and start over.

√ Is the IDE cable from the hard drive properly connected. You may want to see if the system will boot from a floppy drive.

√ Is the system overheating? Look at the overtemperature light on the front panel display (if present). Verify that the power supply and chassis fans are working and the filters are clean.

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If there is a problem running new software:

√ Does the software have a hardware requirement that is not present?

√ Are you using an authorized copy of the software? Some copies of software will not work.

√ Did the software install correctly? Re–install the software.

√ Are you following the software's instructions. Refer to the user manual.

If there is a problem with an add–in board:

√ Is the board installed and configured correctly? Recheck jumper and other configuration settings.

√ Are any cables correctly installed?

If the board is an ISA board (not Plug and Play) refer to the following suggestions:

√ If the board uses an interrupt, run BIOS Setup and set the interrupt used by the ISA board to Used by ISA Card (refer to the *Processor Board User Manual* provided with the 6180 Computer). In the advanced BIOS menu, select the Plug and Play configuration subscreen and then select the use Setup Utility option. If that does not work, try the Use ICU option.

√ If the board uses memory between 80000H and 9FFFFH, run BIOS setup and set conventional memory to 512K.

√ If the board uses memory between C8000H and DFFFH, run BIOS setup and enable shared memory for the appropriate memory space.

If incorrect characters are displayed or are distorted:

√ Are the display contrast and brightness controls properly adjusted? Refer to the operating system containing the video driver for setup functions.

√ Is the video cable / card properly installed?

√ Is the monitor compatible with the selected video mode?

√ If using the integrated display, swing the chassis away from the bezel and check the connection to the display.

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If characters are not displayed on an external monitor:

√ Is the monitor functioning properly?

√ Is the video cable / card properly installed?

√ Check that selected character color is not set the same as the background color.

√ Is the video board and driver properly installed?

√ Reboot the 6180 Computer.

If the hard drive active LED indicator does not come on:

√ Check the IDE cable connections to the drive.

√ Check the front panel connector on the processor board (refer to the separate processor board instructions).

√ Check BIOS Setup for proper configuration, is drive enabled?

√ Reboot the 6180 Computer.

If the Power On LED indicator does not come on:

√ Check the front panel connector on the processor board (refer to the separate processor board instructions).

If the Power On LED flashes:

√ CPU is in a reduced power mode, pressing any key should reactivate normal operation.

If you can not enter BIOS Setup:

√ Check position BIOS enable jumper. If the jumper enables access to the Setup program, you may have to clear CMOS RAM to default values and reconfigure the setup values. Refer to the separate *Processor Board User Manual*.

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Maintenance

Chapter Objective

This chapter describes routine maintenance procedures for:

- cleaning the display
- cleaning the chassis fan filter
- cleaning the power supply filter

Note: See the procedures for replacing the SD104 and SD150 backlights earlier in this manual.

Cleaning the Display

Clean the 6180 Computer with the front panel access doors closed.

ATTENTION: Use of abrasive cleansers or solvents may damage the display window. Do not scrub or use brushes.

To clean the display:

1. Disconnect power from the 6180 Computer at the power source.
2. Using a clean sponge or a soft cloth, clean the display with a mild soap or detergent.
3. Dry the display with a chamois or moist cellulose sponge to avoid water spots.

Removing Paint and Grease

Remove fresh paint splashes and grease before drying by rubbing lightly with isopropyl alcohol. Afterward, provide a final wash using a mild soap or detergent solution. Rinse with clean water.

ATTENTION: Make sure the isopropyl alcohol does not come in contact with the equipment labels. Alcohol may cause the label printing to smear.

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Equipment Hose Downs

If the 6180 Computer has a touchscreen, be aware that screen objects on touchscreens may activate during equipment hose downs.

ATTENTION: Because touchscreens have sensitive touch cell regions, it is possible for screen objects to activate during equipment hose downs.

Cleaning the Chassis Fan Filters

Clean the chassis fan filter at least once a month under normal conditions. You may need to clean the filter more frequently if the 6180 Computer is located in an area with high levels of dust.

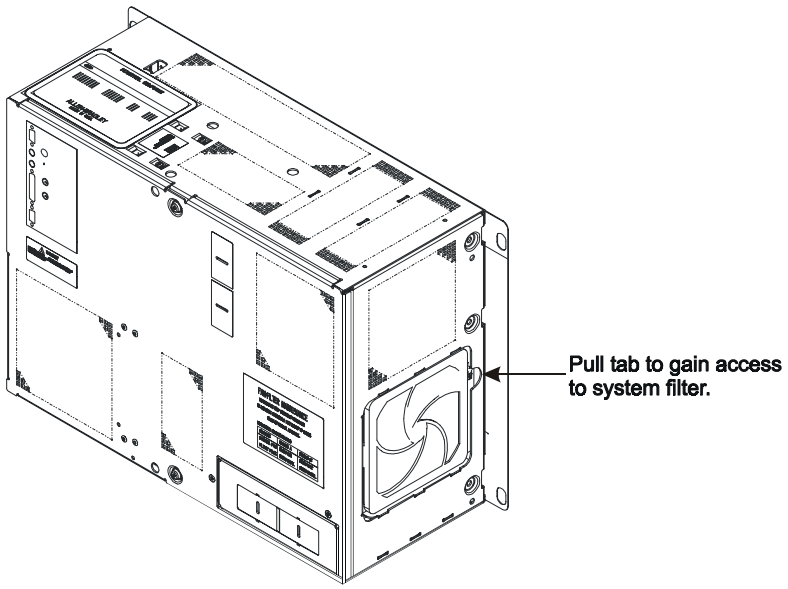
ATTENTION: Disconnect all power from the 6180 Computer before removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer.

To clean the chassis fan filter (Series B):

Note: A replacement filter kit is available (Catalog No. 6189–FAN2FIL). This kit contains a chassis fan filter (includes retainer).

1. Disconnect all power from the 6180 Computer.

Figure 16- 1



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2. Pull the tab to gain access to the system filter.
3. Clean with soap and water.
4. Re-install the filter.

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Cleaning the Power Supply Fan Filter

Clean the power supply fan filter at least once a month under normal conditions. You may need to clean the filter more frequently if the 6180 Computer is located in an area with high dust levels.

ATTENTION: Disconnect all power from the 6180 Computer before removing components. Failure to disconnect power could result in severe electrical shock or damage to the 6180 Computer.

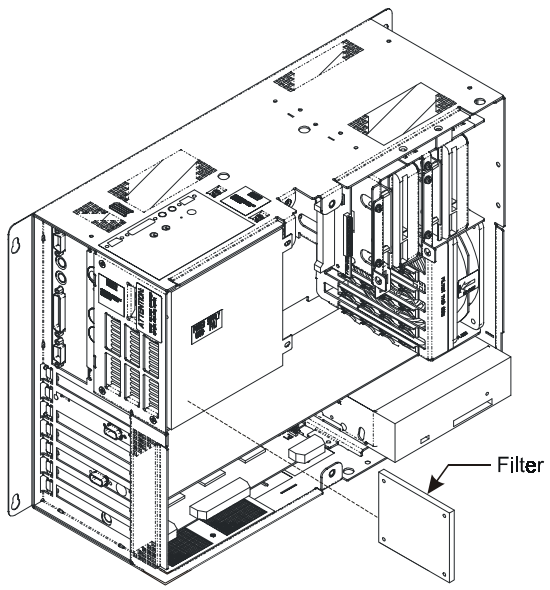
To clean the power supply fan filter:

Note: The Pentium II product does not have a power supply fan filter.

Note: A replacement filter kit is available (Catalog No. 6189–FANFIL). This kit contains a chassis fan filter (includes retainer) and a power supply filter.

1. Disconnect all power from the 6180 Computer.
2. Remove the back panel and accessory drive panel. See page 4-2.
3. Remove the power supply filter..

Figure 16- 2



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4. Clean the filter with soap and water and allow to dry before installing.

5. Install filter. Note: Filter is rectangular not square make sure it is oriented correctly.

6. Install the back panel. See Chapter 4.

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Replacement Parts

Description	Catalog Number
ENCLOSURE:	
BEZEL:	
CPU CARD:	
COMPUTER:	
6181 COMMON PARTS:	

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Specifications

Electrical	
AC Power	
Supply Voltage Limits	Refer to separate power supply publication provided with computer.
Power Consumption	475 VA maximum
Total Power Available PCI and ISA Slot Cards	+5V . . . . . 12A +3.3V . . . .3.5A +12V . . . . 1A –5V . . . . . 0.2A –12V 0.5A
Mechanical	
Enclosure	
Versions with Bezel Gasket	NEMA Types 1, 4/4X (indoor), 12, 13 IEC IP54 IP65
Versions without Bezel Gasket	NEMA Type 1 and IEC IP2X
LED Indicators (if present)	
Power On	Green
Hard Drive Read/Write Access	Green
Overtemperature	Red
Numeric Lock On	Green
Caps Lock On	Green
Weight	
No Display, Metal Bezel	11.25 kg (25 lbs)
All Other Models	15.75 kg (35 lbs)

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Dimensions (overall) – Series B	
No Display, Metal Bezel mm	317.5 (H) x 482.6.0 (W) x 177.8 (D)
inches	12.5 (H) x 19.0 (W) x 7.00 (D)
All Other Models mm	355.6 (H) x 482.8 (W) x 211.15 (D)
inches	14.0 (H) x 19.0 (W) x 8.375 (D)
Cutout Dimensions (All Models) mm	429.26 (W) x 325.39 (W)
inches	16.9 (W) x 12.85 (H)
19 Inch Rack EIA Units	8U

Display (if present)	
10.4 inch (264 mm)	
Type	Thin Film Transistor Liquid Crystal Display (TFT-LCD)
Touch Cells (Touchscreen)	_ 1000 x 1000 touch points
Touch Cell Size	_ .21 X .16 mm^2
12.1 inch (??? mm)	
Type	???
Touch Cells (Touchscreen)	???
Touch Cell Size	???
15 inch (384 mm)	
Type	Thin Film Transistor Liquid Crystal Display (TFT-LCD)
Touch Cells (Touchscreen)	_ 1000 x 1000 touch points
Touch Cell Size	_ .30 X .23 mm^2

Environment	
Operating Temperature	5 to 50° C (41 to 122° F)
Storage Temperature	–25 to 60° C (–13 to 140° F)
Relative Humidity	8 to 80% (non–condensing)
Heat Dissipation	210 Watts (716 BTU/hr)

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Shock and Vibration	
Impulse Shock operating non–operating	 15G ($^1/_2$ sine, 11 msec) 30G ($^1/_2$ sine, 11 msec)
Vibration Operating	Swept sine input, 0.006 inch displacement 10–57 Hz 1.0g acceleration 57–150 Hz
Agency Certifications	UL/cUL 508/1950
	FCC class A
	CE marked for all applicable directives
	EMC EN 50081–2/82–2 LVD EN 60950

The following table provides operating and technical specifications of the available power supplies:

Phase 1 and 2	160 Watt Supply	210 Watt Supply
Input Voltage	100 to 120V AC RMS	100 to 120 AC RMS
	200 to 240V AC RMS	200 to 240V AC RMS
Min. and Max. Voltages [1]	90 to 135V AC RMS 180 to 265V AC RMS	85 to 135V AC RMS 170 to 265V AC RMS
Input Voltage Selection	Input Selector Switch	Automatic
Input Frequency	47 to 63 Hz	47 to 63 Hz
Output Power at 50°C	160 Watts	210 Watts
Operating Temperature	10 to 50°C (40 to 122°F)	0 to 50°C (32 to 122°F)
Shock	15G 30G Non–Operating	15G Operating 30G Non–Operating
Vibration	1G Operating, 2G Non-operating	1G Operating, 2G Non-operating
Thermal Shutdown	No	Yes
Voltage Holdup Time	17msec at 115V AC and full power	20msec at 85V AC and full power

[1] These voltages are operating limits not recommended operating voltages. Refer to Input Voltage specifications for recommended supply voltage ranges.

Phase 3	180 Watt Supply for Slot 1 CPUs
Input Voltage	100 to 120 AC RMS
	200 to 240V AC RMS
Min. and Max. Voltages[1]	85 to 135V AC RMS 170 to 265V AC RMS
Input Voltage Selection	Automatic
Input Frequency	47 to 63 Hz

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Output Power at 50°C	180 Watts
Operating Temperature	0 to 50°C (32 to 122°F)
Shock	15G Operating 30G Non–Operating
Vibration	1G Operating, 2G Non-operating
Thermal Shutdown	Yes
Voltage Holdup Time	20msec at 85V AC and full power

[1] These voltages are operating limits not recommended operating voltages. Refer to Input Voltage specifications for recommended supply voltage ranges.

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	DC Input 200 Watt Supply
Input Voltage	24 V DC
Min. and Max. Voltages[1]	18-32 V DC
Output Power at 50°C	200 Watts
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-30 to 70°C (-22 to 158°F)
Shock	20G Operating 30G Non–Operating
Vibration	1G Operating 2G Non–Operating
Thermal Shutdown	Yes

Phase 4	210 Watt Supply
Input Voltage	???
Min. and Max. Voltages[1]	???
Input Voltage Selection	???
Input Frequency	???
Output Power at 50°C	???
Operating Temperature	???
Shock	???
Vibration	???
Thermal Shutdown	???
Voltage Holdup Time	???

[1] These voltages are operating limits not recommended operating voltages. Refer to Input Voltage specifications for recommended supply voltage ranges.

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European Union Directive Compliance

European Union Directive Compliance

If the 6180 Industrial Computer is installed within the European Union or EEA regions and has the CE mark, the following regulations apply.

EMC Directive

This apparatus is tested to meet Council Directive 89/336/EEC Electromagnetic Compatibility (EMC) using the following standards, in whole or in part:

- EN 50081–2:1993 EMC - Generic Emission Standard, Part 2 - Industrial Environment
- EN 50082–2:1995 EMC - Generic Immunity Standard, Part 2 - Industrial Environment

The product described is intended for use in an industrial environment.

LV Directive

This apparatus is designed and tested to meet Council Directive 73/23/EEC Low Voltage Directive (LVD) using the following standards, in whole or in part:

- EN 60950 with all national deviations
- UL 508
- UL 1950

Intended Use of Product

According to these Standards, the factor which determines, for EMC purposes, whether an apparatus is deemed to be “Industrial” or “Residential, commercial and light industrial”, is given in Clause 1 of EN50081–2 as follows:

Apparatus covered by this standard is not intended for connection to a public mains network but is intended to be connected to a power network supplied from a high– or medium–voltage transformer dedicated for the supply of an installation feeding a manufacturing or similar plant.

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The 6180 Industrial Computers are intended for use solely in an industrial environment as defined above. When installed in Europe, any other application is in contravention of European Union Directives, and a breach of these laws.

Wiring Recommendations

To reduce electrical noise, connect the 6180 Industrial Computer to its own branch circuit. The input power source should be protected by a fuse or circuit breaker rated at no more than 15 Amps. Route incoming power to the 6180 Industrial Computer by a separate path from the communications cables.

Where power and communications lines must cross, they should cross at right angles. Communications lines can be installed in the same conduit as low level DC I/O lines (less than 10 Volts).

Declarations of Conformity

The Declaration of Conformity is available at the Rockwell Automation / Allen–Bradley Internet site: **www.ab.com**
This document declares that the computers conform to the applicable directives.

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Field Replacement Units (FRU)

Overview

The replacement units 6189-FD144 and 6189-CD-ROM include the following items:

- Floppy drive or CD-ROM drive
- IDE cable

For additional information on mounting brackets and covers, refer to 6180 Accessory Mounting Brackets and Covers publication.

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Glossary

BIOS

Acronym for Basic Input/Output System. A set of low level routines stored in the 6180 Industrial Computer's Read Only Memory (ROM) that application programs use to interact with hardware such as a keyboard, mouse, add-in card, accessory drives, and printer.

BIOS Setup

Menu driven program for viewing and changing the BIOS. Pressing the [F1] key while the system is booting up, accesses the BIOS Setup.

CPU

Acronym for Central Processing Unit. The formal terminology for the 6180 Industrial Computer Intel Pentium processor chip.

DMA

Acronym for Direct Memory Access.

DIMM

Acronym for Double In Line Memory Module. These memory chips add RAM to a computer.

IDE

Acronym for Integrated Device Electronics. A drive interface specification for hard disks up to 4 GB capacity. The 6180 Industrial Computer has 2 IDE connectors.

IrDA

Acronym for Infrared Data Association. The 6180 Industrial Computer IrDA (not on all versions) provides a high speed wireless link between a PC and other devices also having an IrDA receiver / transmitter.

IRQ

Acronym for Interrupt Request.

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ISA

Acronym for Industry Standard Architecture. The 8 and 16 bit bus design for add-in cards featured in the IBM PC/AT.

KIC

Acronym for Keyboard Interface Card. An Isa based, multi-purpose I/O board that provides an interface for the input devices such as keyboard, mouse, touchscreen, and front panel keys (if present).

KIC Configuration Utility

Offline software tool for configuring the KIC card. This utility allows a user to customize the operation of an input device. Typically the KIC Configuration Utility is used to map the keys located on the front panel of some versions of the 6180 Industrial Computer.

LCD

Acronym for Liquid Crystal Display. A display technology that relies on polarizing filters and liquid crystal cells rather than phosphorous illuminated by electron beams to produce a screen image.

PCI

Acronym for Peripheral Component Interconnect Bus. A 32/64 bit local bus architecture developed by DEC, IBM, Intel and others that is widely used in Pentium based personal computers. A PCI bus provides a high bandwidth data link between system board components.

Pentium

A processor chip made by Intel that uses a 64-bit internal architecture.

Plug and Play

Also shown as PnP. A specification developed by Intel and Microsoft that makes many computers and peripheral devices self configuring by determining their own DMA, IRQ, and address. Part of Windows 95, Plug and Play requires an operating system with PnP BIOS.

RAM

Acronym for Random Access Memory, the main computer operating memory. Programs and data must first be loaded into RAM and executed or processed from there. RAM is volatile, losing its contents when power is removed.

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SIMM

Acronym for Single In Line Memory Module. These memory chips add RAM to a computer. The most popular format is the 72-pin SIMM which holds from I to 64 Mbytes. SIMMs are available in different speeds, with typical response times of 50 to 80 nano seconds.

SVGA

Acronym for Super Video Graphics Array. An extension of the VGA video standard. SVGA enables video adapters to support resolutions of 800 x 600 pixels and higher with up to 16.7 million colors.

USB

The Universal Serial Bus (USB) is a new external bus standard that supports data transfer rates of 12Mbps (12 million bits per second). A single USB port can be used to connect up to 127 peripheral devices, such as mice, modems, and keyboards. USB also supports Plug-and-Play installation and hot plugging.

Starting in 1996, a few computer manufacturers started including USB support in their new machines. It is expected to be commonplace and to eventually replace serial and parallel ports completely.

XGA

Acronym for Extended Graphics Array. This video standard was introduced in 1990 to replace the older 8515/A video standard. It provides the same resolutions (640 by 480 or 1024 by 768 pixels), but supports more simultaneous colors (65,000 vs the 8514/A's 256). In addition, XGA allows monitors to be non-interlaced.

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